



THE *Southern Co.* NLR,  
INC.

## Truck Washout Plan

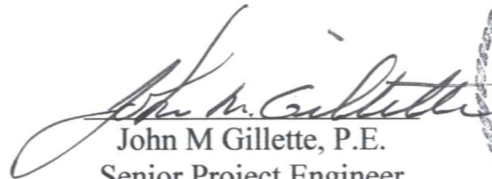
AFIN: 66-00296 Permit No. 3067-WR-1  
for

**Eastern Tank Services, Inc.  
Fort Smith Yard  
9100 Hwy 271 South  
Fort Smith, Arkansas 72908**

### Prepared for:

Eastern Tank Services, Inc.  
P.O. Box 6235  
Fort Smith, Arkansas 72906

### Prepared by:

  
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July 15, 2011

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## **1.0 INTRODUCTION**

This Truck Washout Plan describes the delivery, storage, and disposal of waste generated by the existing Eastern Tank Services, Inc. (ETSI) truck washout facility in Fort Smith, Arkansas. ETSI currently uses this facility to wash out the interior of truck tanks and frac tanks and to wash down the exterior of tanks, trailers, and tractors that have been used in the transportation of non-petroleum production fluids related to oil and gas production activities. This plan represents the current design of the facility.

### **1.1 Site Description**

The truck washout facility is located at the ETSI Fort Smith Yard located at 9100 Hwy 271 South, Fort Smith, Sebastian County, Arkansas, 72908. The facility is in the SE ¼, Sec 8, T7N, R32W, and the latitude/longitude coordinates are 35°17'53.44"N/94°25'24.37"W. The site is bounded by Racetrack Road and U.S. Highway 271 to the east; Rutgers Street, a business and a private residence to the south; cleared, undeveloped property to the west; and a commercial property to the north. The nearest water body is an unnamed stream that flows eastward along a new residential development and then northeastwardly into Mill Creek. At its closest point, the stream is approximately 370 feet to the east of the site. Site topography is relatively flat with an average elevation of approximately 510 feet above mean sea level. Figures 1 and 2 in Appendix A show the facility location on a USGS topographic map and Sebastian County map, respectively.

## **2.0 WASTE MANAGEMENT PLAN**

### **2.1 Waste Generation**

This facility will provide washout services for ETSI truck tanks and frac tanks and wash down of the exterior of tanks, trailers, and tractors that haul non-petroleum production fluids related to oil and gas production activities. The source of fresh water for the washout services is from the city of Fort Smith, Arkansas municipal water supply. Pit water will be recycled for washout and wash-down purposes when possible.

Information provided by ETSI indicates the total number of tanker washouts and exterior wash downs ranges from approximately 25 per day to a maximum of 140 per day. Each tanker washout is expected to generate an average of 100 gallons of liquid and 5 gallons of solids, and each exterior wash down generates an average of 25 gallons of liquid and 1 gallon of solids. To provide a conservative estimate of the volume of waste generated, calculations were based on the assumption that only tanker washouts are conducted. At this rate and depending on the number of tanker washouts per day, the facility will generate between 2,500 and 14,000 gallons per day of liquids and between 125 and 700 gallons per day of solids. Calculated on an annual basis (assuming only tanker washouts), between 912,500 and 5,110,000 gallons of liquids and between 45,625 and 255,500 gallons of solids are generated. These calculations assume only freshwater

usage and do not account for recirculation of pit water, precipitation, or evaporation. Waste generation calculations are included in Appendix B.

Liquids and solids will be removed from the wash pit and transported offsite for disposal at a rate that is sufficient to prevent exceeding the minimum 2 feet of freeboard in the wash pit. Liquids may also be transferred to the onsite produced water tanks in order to maintain the minimum freeboard in the wash pit. Any incidental oil that accumulates in the wash pit will be skimmed off and transferred to the onsite used oil tank pending disposal.

## **2.2 Pit Design and Storage**

The truck wash pad and wash pit are located in the center of the property adjacent to the north end of the truck parking area. The truck wash pad is a curbed concrete pad that is sloped to drain to an in-ground concrete wash pit. Washouts and wash-downs are conducted on the wash pad which contains and directs all fluids into the wash pit. Liquids are normally removed from the wash pit and transported directly to the offsite disposal facility. Liquids may also be removed from the wash pit and transferred to the onsite produced water tanks for storage pending transport to the offsite disposal facility. Incidental oil that accumulates in the wash pit will be transferred to the onsite used oil tank pending disposal. The four fiberglass ASTs located within the earthen berm adjacent to the produced water tanks are utilized for drilling mud storage only and are not part of the truck washout system. The 500 bbl frac tank located within the earthen berm adjacent to the produced water tanks is utilized only for temporary storage of sludge from the cleanout of tanks at the Spooky 1-4 SWD facility and is not part of the truck washout system. The facility layout showing the locations of the truck washout system components is shown on Figure 3-Site Plan.

The truck wash pad is 33 feet long and 20.5 feet wide with a 23 foot by 10 foot concrete apron. The apron is sloped to drain to the wash pad. The wash pit measures 14.7 feet long by 12.5 feet wide and is 10.0 feet deep measured from the tops of the three pit sidewalls. The depth of the wash pit is 8.0 feet measured from the lip of the wash pad. Allowing for 2 feet of freeboard, the maximum capacity of the wash pit is 9,621 gallons or 229 barrels. Figure 4-Truck Wash Pit shows the as-built construction of the truck wash pad and wash pit. Capacity calculations are included in Appendix B.

The three produced water tanks and the used oil tank are used for temporary storage and oil/water separation of Class II fluids (produced water) that are transported from various oil and gas extraction sites. All four tanks are single wall, vertical fiberglass aboveground tanks, each with a capacity of 400 barrels. The tanks are located on a concrete slab with a concrete perimeter wall for secondary containment. The secondary containment structure has an HDPE liner installed between the ASTs and the concrete slab and perimeter walls. Fluids from the wash pit are transferred to the produced water tanks rather than transported directly to the offsite disposal facility when necessary to maintain the required freeboard in the wash pit. Any oil in the fluids transferred from the wash pit will be allowed to phase separate from the water, and the oil layer will be

transferred to the used oil AST. The remaining water layer will be transferred to tanker trucks and transported offsite for disposal.

No other tanks at the ETSI Fort Smith Yard are operated as components of the truck washout system.

### **2.3 Transportation and Disposal of Waste**

When sufficient liquids have accumulated in the wash pit, fluids are transferred to a tanker truck and transported under manifest to Johnson County Disposal Well Services' Spooky No. 1-4 injection well for disposal. Records of all liquids removed from the wash pit and transported offsite for injection well disposal are maintained onsite.

Liquids from the wash pit may also be transferred to the onsite produced water tanks in order to maintain the minimum freeboard in the pit. Liquids will be removed from the pit using a vac truck and then offloaded to the produced water tanks where oil is allowed to phase separate from the water. The oil layer is transferred to the used oil tank, and liquids in the produced water tanks are transported under manifest to Johnson County Disposal Well Services' Spooky No. 1-4 injection well for disposal. Records of liquids removed from the wash pit and transferred to the produced water tanks are maintained onsite.

Any liquids transfers from the wash pit to the onsite produced water tanks are documented with the quantity accounted for in the wash pit waste volumes.

Solids that accumulate in the wash pit are removed as necessary to maintain the pit capacity and freeboard and transported under manifest to the City of Sallisaw Solid Waste Landfill in Sallisaw, Oklahoma for disposal. No surface application of wastes from the facility is performed.

## **3.0 RECORDKEEPING**

ETSI will maintain in the onsite office the following records in association with the washout system.

1. ETSI will record how many trucks per day utilize the wash pit.
2. ETSI will document how many gallons of fluid per day are dispensed into the wash pit.
3. ETSI will record the volumes of any liquid transfers from the wash pit to the onsite produced water tanks and used oil tank.
4. ETSI will record the volume of water and solids that are removed from the wash pit, the name of the company that transported the material, and the facilities where the water and solids were shipped for disposal.

## **4.0 CLOSURE PLAN**

This Closure Plan and Cost Estimate has been designed for the removal and disposal of wastes and the associated storage systems at the facility. This plan includes closure of the truck wash pad, wash pit, the three 400 bbl produced water ASTs, the 400 bbl used oil AST, the four 400 bbl drilling mud ASTs, the 500 bbl cleanout sludge frac tank, and the associated secondary containment structures. This closure plan does not account for any other improvements or activities at the ETSI Fort Smith Yard. The total estimated cost for closure is \$41,212.80. Details of the closure cost estimate are included in Appendix D.

Specific tasks associated with the closure include the following:

1. Removal of remaining fluids and solids.
2. Removal of ASTs and the frac tank.
3. Demolition of all concrete improvements and secondary containment structures.
4. Backfill with SB-2 gravel to match surrounding ground surface level.
5. Grade disturbed area to prevent stormwater ponding or excessive stormwater runoff.

### **4.1 Removal of Remaining Fluids and Solids.**

For the purpose of cost estimation, the wash pit is assumed to be filled to the maximum permitted capacity. The waste in the wash pit is assumed to be 95% liquid and 5% solids, based on the expected production of fluids and solids discussed in Section 2.1. The capacity of the pit with the minimum 2 feet of freeboard is 229 bbl, resulting in 218 bbl of fluids and 12 bbl or roughly 3 cubic yards of solids requiring disposal. The liquids will be transported to Johnson County Disposal Well Services' Spooky No. 1-4 injection well for disposal. The solids will be transported to the City of Sallisaw Solid Waste Landfill in Sallisaw, Oklahoma for disposal.

For the purpose of cost estimation, the three produced water ASTs are assumed to be filled to the maximum permitted capacity of 400 bbl each for a total of 1,200 bbl of liquids requiring disposal. The liquids will be transported to Johnson County Disposal Well Services' Spooky No. 1-4 injection well for disposal.

For the purpose of cost estimation, the used oil AST is assumed to be filled to the maximum permitted capacity for a total of 400 bbl of oil requiring recycling/disposal. The used oil will be picked up by FCC Environmental and transported to their facility for recycling/disposal. FCC Environmental will pick up the waste oil at no cost, and no disposal costs are associated with the used oil tank contents.

For the purpose of cost estimation, the four drilling mud ASTs are assumed to be filled to the maximum permitted capacity of 400 bbl each for a total of 1,600 bbl. The drilling mud in the ASTs is the property of various ETSI customers and is only held for temporary storage. The drilling mud will be transported offsite and returned to the owner(s). Disposal of the drilling mud is not required, and only costs for transportation of the drilling mud to the owner facilities is included.

For the purpose of cost estimation, the cleanout sludge frac tank is assumed to be filled to the maximum permitted capacity for a total of 500 bbl of sludge requiring disposal. The sludge will be removed from the frac tank and transported to J. Scott, Inc. in El Reno, Oklahoma for disposal.

#### **4.2 Removal of Equipment and Concrete Improvements.**

The truck wash concrete pad and apron will be broken up using a dozer and pushed aside. The walls of the wash pit will then be pushed in and the broken concrete from the pad and apron will be worked into the pit and pad areas. The debris will be further crushed and compacted by walking down with the dozer. The process will be conducted such that the debris is a minimum of 2 feet below the surrounding ground surface. It is estimated that the process will require 6 hours of dozer time.

After the contents of the fiberglass ASTs have been removed, the ASTs will be crushed using a dozer. The crushed ASTs and HDPE secondary containment liner will then be transported to a Class 1 landfill for disposal.

After the sludge has been removed from the frac tank, the frac tank will be transported to an offsite facility for reuse or recycled as scrap metal, depending on its condition. Neither option will incur disposal costs, so only the cost for transporting the frac tank to an offsite facility is included.

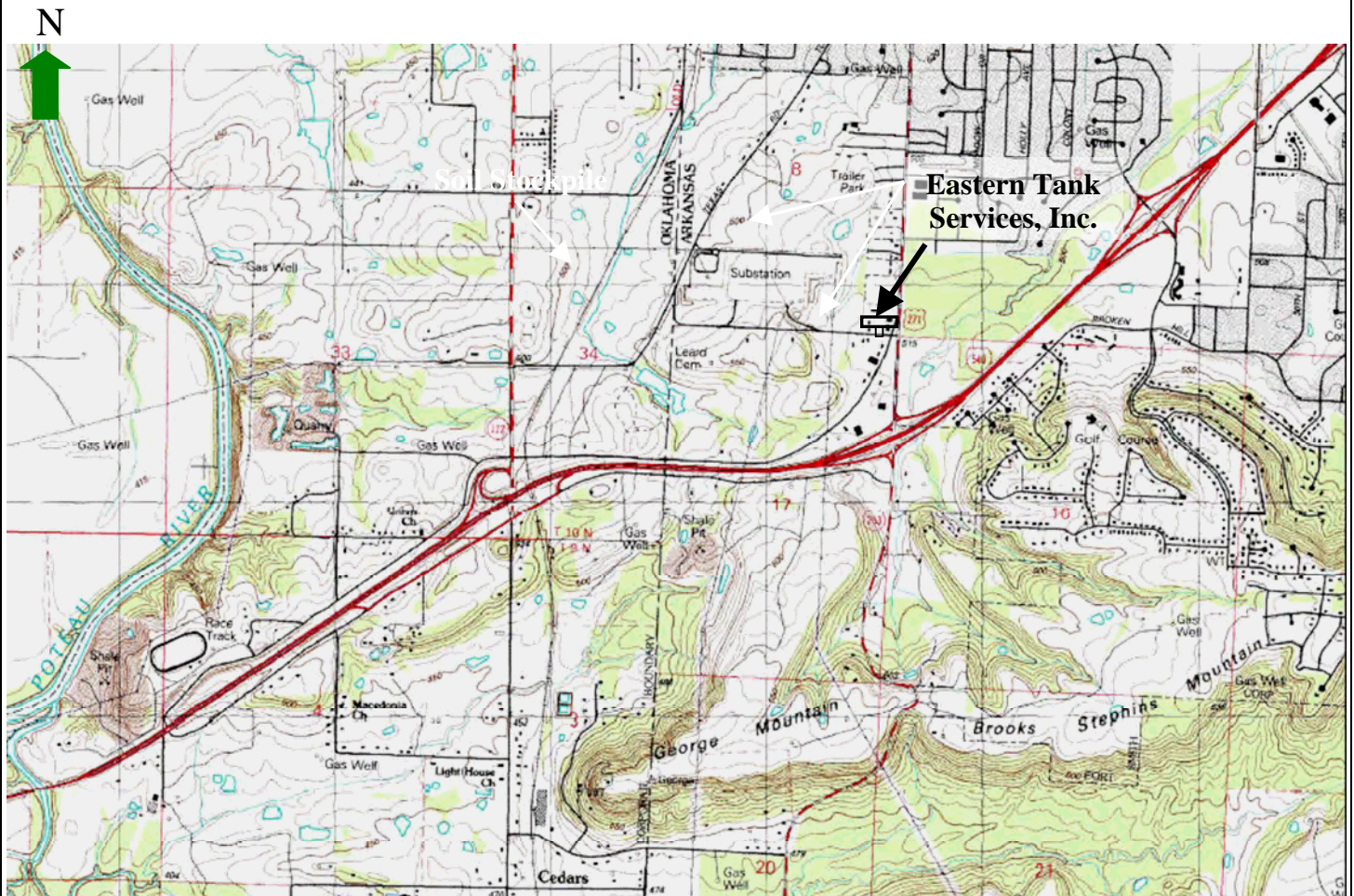
The secondary containment concrete pad and walls will be broken up using a dozer. The dozer will be used to prepare a shallow depression adjacent to the secondary containment structure, and broken concrete from the secondary containment structure will be worked into the depression. The debris will be further crushed and compacted by walking down with the dozer. It is estimated that the process will require 6 hours of dozer time.

#### **4.3 Leveling and Backfill**

After the debris has been sufficiently crushed and compacted, the secondary containment earthen berm will be used to backfill over the concrete debris. If necessary, SB-2 gravel will be used to backfill the areas to match the surrounding ground surface level. The backfill will be compacted and graded so as to prevent stormwater ponding or excessive runoff. It is estimated that the process will require 4 hours of dozer time.

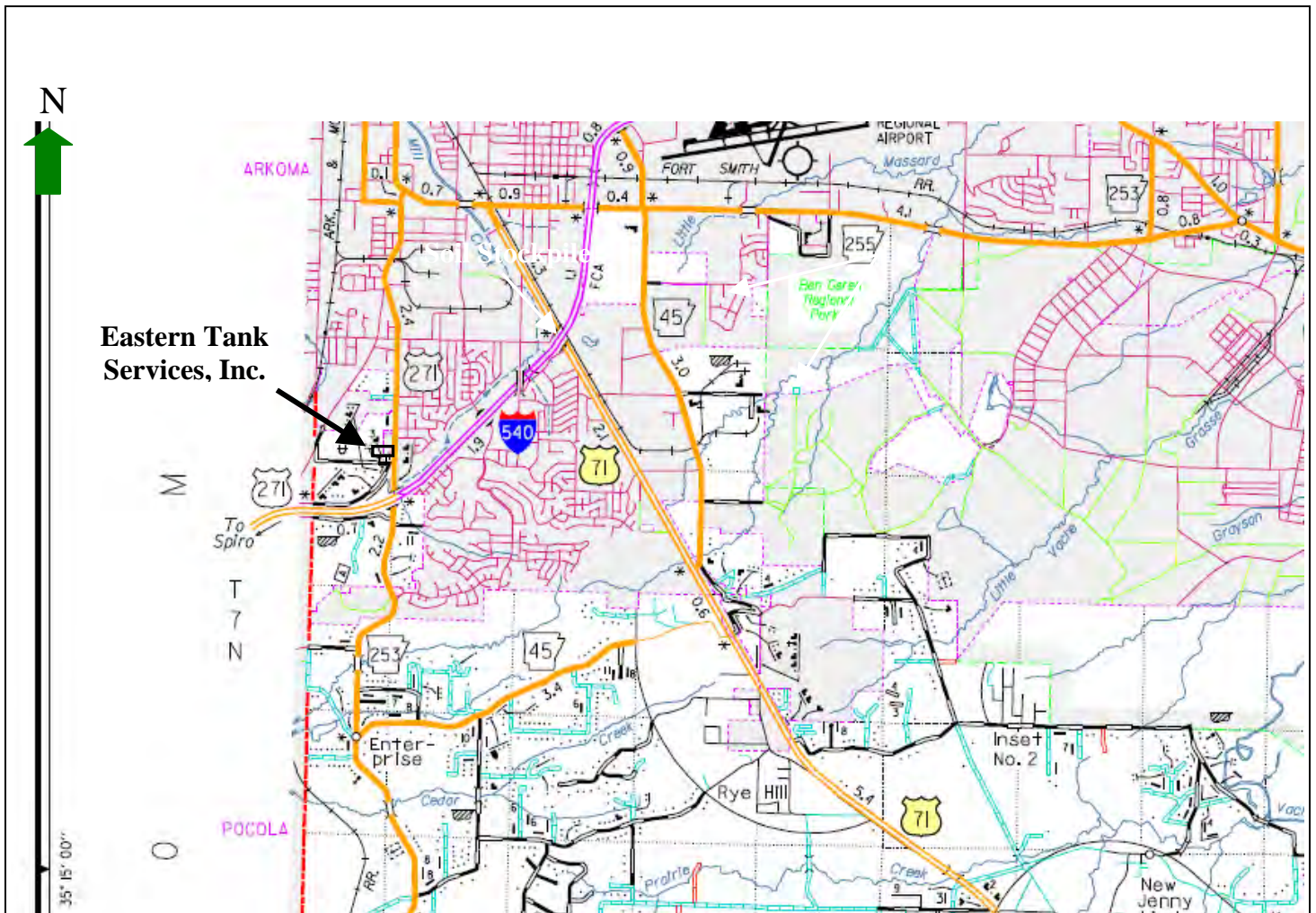
**APPENDIX A**  
**FIGURES**





Source: USGS South Fort Smith, Arkansas-Oklahoma 7.5 Minute Series Quadrangle, 1987

Figure 1  
Topographic Map  
Eastern Tank Services, Inc.  
9100 Hwy 271 South  
Fort Smith, Arkansas



Source: AHTD – Sebastian County, Arkansas Map, revised 5-10-2010

## Figure 2 Sebastian County Map

Eastern Tank Services, Inc.  
9100 Hwy 271 South  
Fort Smith, Arkansas



**APPENDIX B**  
**SYSTEM DESIGN AND CALCULATIONS**

12/27/10

EASTERN TANK SERVICES - FORT SMITH YARD

AFIN: 66-00296 PERMIT No. 3067-WR-1

AS-BUILT TRUCK WASHOUT PAD & PIT VOLUME

NOTE: CALCULATIONS BASED ON DIMENSION MEASUREMENTS  
TAKEN ON 12/15/10 AND INFORMATION PROVIDED  
BY EASTERN TANK SERVICES

SEE ATTACHED DRAWING - (FIG. 4 - TRUCK WASHOUT PIT)  
FOR TRUCK WASHOUT PAD & PIT DIMENSIONS.

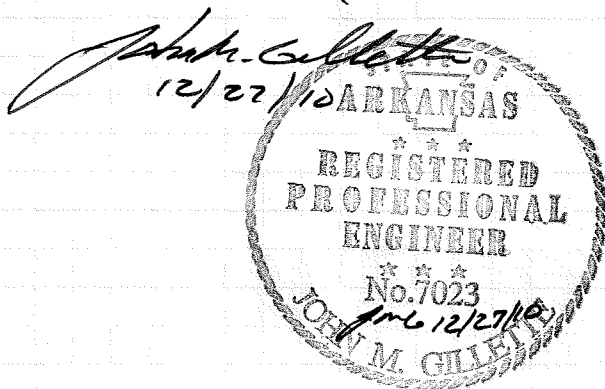
VOLUME OF TRUCK WASHOUT PIT WITH 2' MIN. FREEBOARD.

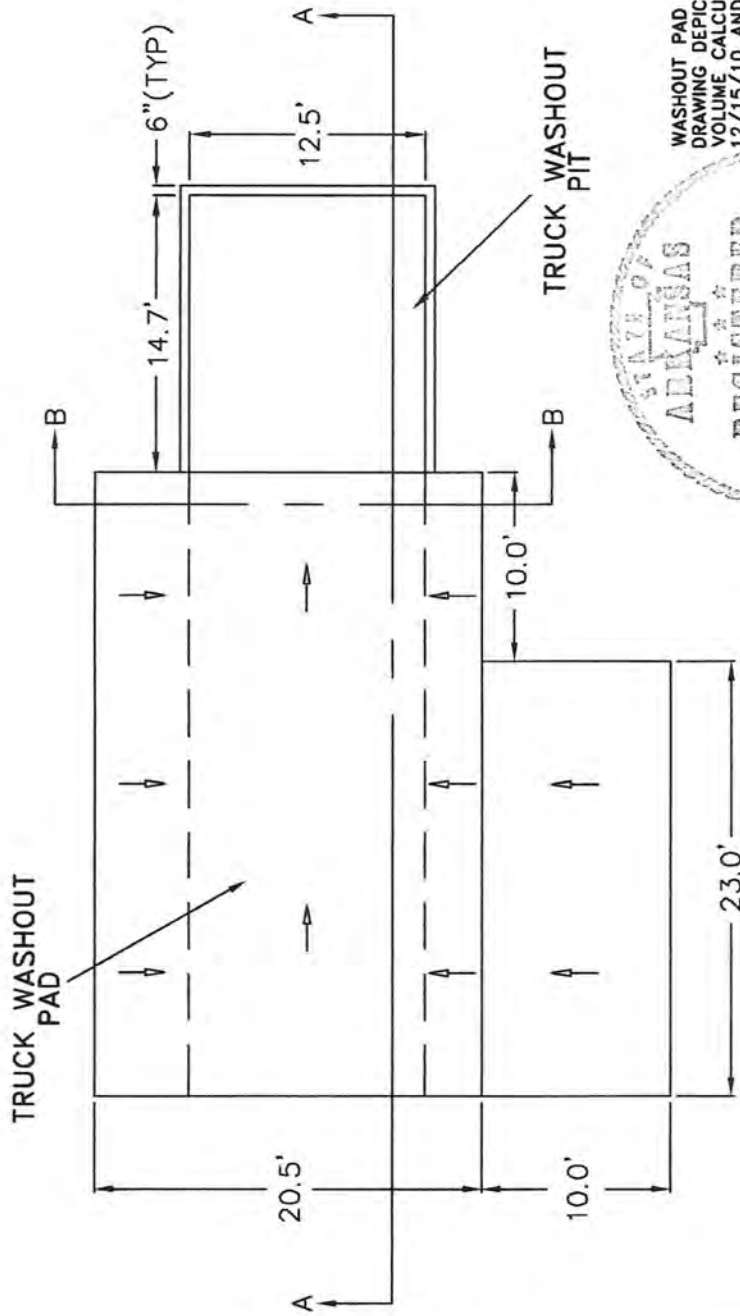
$$\text{VOL} = L \times W \times H \times 7.48 \frac{\text{GAL}}{\text{FT}^3} \quad L = 14.7'$$

$$\text{VOL} = 14.7 \times 12.5 \times 7.0 \times 7.48 \quad W = 12.5'$$

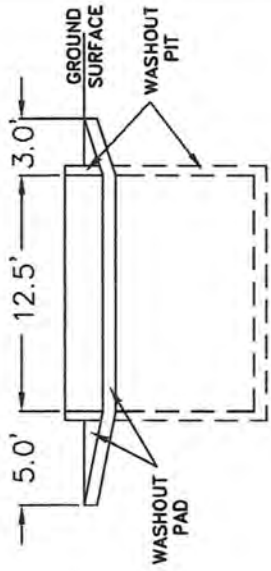
$$\text{VOL} = \underline{9621 \text{ GAL}} \quad H = 7.0'$$

$$\text{VOL} = 9621 / 42 = \underline{229 \text{ BBL}}$$

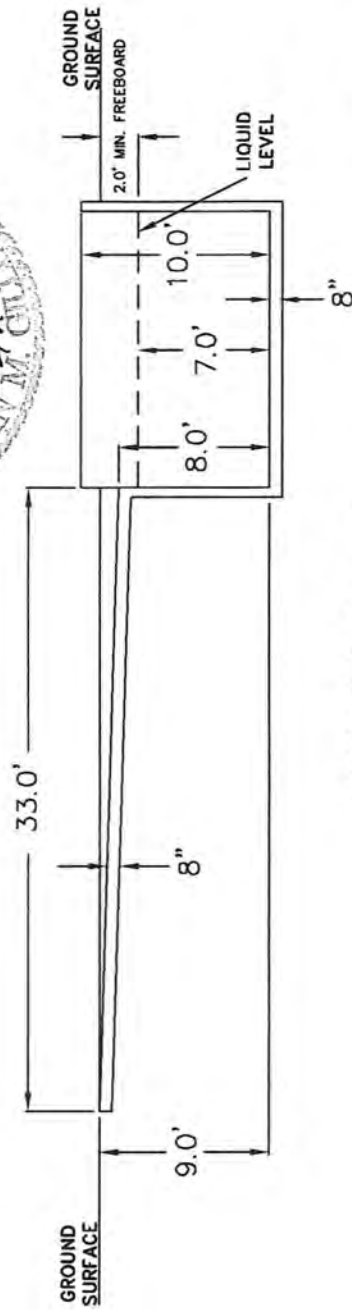




PLAN VIEW



SECTION B - B



SECTION A - A



WASHOUT PAD AND PIT ARE CAST-IN-PLACE CONCRETE CONSTRUCTION. DRAWING DEPICTS AS-BUILT WASHOUT PAD AND PIT DIMENSIONS. VOLUME CALCULATIONS BASED ON MEASUREMENTS TAKEN ON 12/15/10 AND INFORMATION PROVIDED BY EASTERN TANK SERVICES. STEEL POSTS AND RAILINGS INSTALLED ON TOP OF NORTH, EAST, AND SOUTH WALLS OF PIT. STEEL GATE INSTALLED ACROSS WEST SIDE OF PIT.

VOLUME OF WASHOUT PIT WITH 2' FREEBOARD: 9621 GAL = 229 BBL

LEGEND



SITE EASTERN TANK SERVICES, INC.  
FORT SMITH YARD

DESIGNED BY	DATE	TITLE
JMG	2/2011	TRUCK WASHOUT PIT
DRAWN BY	DATE	
JMG	2/2011	
CHECKED BY	DATE	
APPROVED BY	DATE	PROJECT NO.
		SCALE 1"=10'
		DRAWING NO.
		FIGURE 4
		REV.

Pg 1/2 1/10/11

EASTERN TANK SERVICES - FORT SMITH YARD

AFIN: 66-00296 PERMIT No. 3067-WR-1

TRUCK WASHOUT WASTE GENERATION

- PER EASTERN TANK, ESTIMATED RANGE OF 25 TO 140 TANK TRUCK WASHOUTS PER DAY.
- ASSUME 100 GAL LIQUID + 5 GAL SOLIDS GENERATED PER WASHOUT.
- SOME TRUCK EXTERIOR WASHING PERFORMED. 25 GAL LIQUID + 1 GAL SOLIDS GENERATED PER EXTERIOR WASH.
- ASSUME ALL TANK TRUCK WASHOUTS FOR WASTE GENERATION CALCULATIONS.

MIN. ESTIMATED LIQUID WASTE GENERATED:

$$\text{MIN} = (25 \text{ WASHOUTS/DAY}) (100 \frac{\text{GAL LIQ.}}{\text{WASHOUT}})$$

$$\text{MIN. LIQUID GENERATED} = \underline{2500 \text{ GAL/DAY}} = \underline{912,500 \frac{\text{GAL}}{\text{YR}}}$$

MAX. ESTIMATED LIQUID WASTE GENERATED:

$$\text{MAX} = (140 \text{ WASHOUTS/DAY}) (100 \frac{\text{GAL. LIQ.}}{\text{WASHOUT}})$$

$$\text{MAX. LIQUID GENERATED} = \underline{14,000 \text{ GAL/DAY}} \\ = \underline{5,110,000 \text{ GAL/YR}}$$

MIN. ESTIMATED SOLID WASTE GENERATED:

$$\text{MIN.} = (25 \text{ WASHOUTS/DAY}) (5 \frac{\text{GAL SOLIDS}}{\text{WASHOUT}})$$

$$\text{MIN. SOLIDS GENERATED} = \underline{125 \text{ GAL/DAY}} = \underline{45,625 \frac{\text{GAL}}{\text{YR}}}$$

MAX. ESTIMATED SOLID WASTE GENERATED:

$$\text{MAX} = (140 \text{ WASHOUTS/DAY}) (5 \frac{\text{GAL. SOLIDS}}{\text{WASHOUT}})$$

$$\text{MAX. SOLIDS GENERATED} = \underline{700 \text{ GAL/DAY}} \\ = \underline{255,500 \text{ GAL/YR}}$$

$$\text{MIN. TOTAL WASTE GENERATED} = 2500 + 125 = \underline{2,625 \text{ GAL/DAY}} \\ = \underline{958,125 \text{ GAL/YR}}$$

$$\text{MAX. TOTAL WASTE GENERATED} = 14,000 + 700 = \underline{14,700 \text{ GAL/DAY}} \\ \underline{5,365,500 \text{ GAL/YR}}$$

PG 2/2

1/10/11

EASTERN TANK SERVICES - FORT SMITH YARD

TRUCK WASHOUT WASTE GENERATION

VOLUME OF TRUCK WASHOUT PIT WITH MIN. 2' FREEBOARD IS 9621 GAL. (CALCULATIONS ON SEPARATE SHEET)

LIQUIDS IN WASHOUT PIT REMOVED AND TRANSPORTED TO PERMITTED INJECTION WELL FOR DISPOSAL. REMOVAL AND TRANSPORT CONDUCTED USING 5000 GALLON TANK TRUCKS.

LENGTH OF TIME TO REACH WASHOUT PIT CAPACITY (ASSUME WASHOUT PIT IS INITIALLY EMPTY) AT MIN. GENERATION.

$$\text{MIN.} = (9621 \text{ GAL} / 2625 \text{ GAL/DAY})$$

$$\text{MIN. TIME} = \underline{3.7 \text{ DAYS}}$$

TO MAINTAIN WASHOUT PIT LIQUID LEVEL AT THE MIN. WASTE GENERATION RATE ASSUMING LIQUID REMOVAL USING 5000 GAL TANK TRUCK:

$$\text{DAYS/LOAD} = (5000 \text{ GAL/LOAD}) \left( \frac{\text{DAY}}{2625 \text{ GAL}} \right)$$

$$\text{DAYS/LOAD} = \underline{1.9 \text{ DAYS}} \text{ OR } \underline{0.5 \text{ LOADS/DAY}}$$

1.9 DAYS IS MAX. TIME BETWEEN 5000 GAL TANK TRUCK LOADS TO MAINTAIN WASHOUT PIT LEVEL AT THE MINIMUM WASTE GENERATION RATE.

LENGTH OF TIME TO REACH CAPACITY AT MAXIMUM WASTE GENERATION: (ASSUME INITIALLY EMPTY)

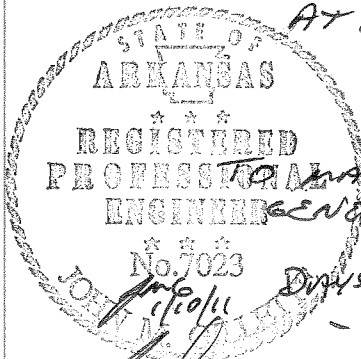
$$\text{AT MAX. RATE: } (9621 \text{ GAL} / 14,700 \text{ GAL/DAY})$$

$$\text{MIN. TIME} = \underline{0.65 \text{ DAYS}}$$

TO MAINTAIN WASHOUT PIT LEVEL AT MAX WASTE GENERATION RATE:

$$\text{DAYS/LOAD} = (5000 \text{ GAL/LOAD}) \left( \frac{\text{DAY}}{14,700 \text{ GAL}} \right)$$

$$\text{DAYS/LOAD} = \underline{0.34 \text{ DAYS}} \text{ OR } \underline{2.94 \text{ LOADS/DAY}}$$



*John M. Silletto*  
1/10/11



**APPENDIX C**

**LETTER TO ARKANSAS DEPARTMENT OF HEALTH**



THE *Southern Co.* NLR,  
INC.

December 20, 2010

Department of Health - Engineering Section  
Attn: Danny Smith  
4815 W. Markham Street  
Slot 37  
Little Rock, AR 72205-3867

RE: Application of Beneficial Waste permit for Eastern Tank Service, Inc.

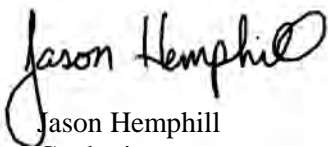
Eastern Tank Service, Inc. (ETSI) is seeking to renew its permit for a truck washout pit at its truck maintenance facility located at the ETSI facility located at 9100 Hwy 271 South, Fort Smith, Arkansas, 72908; 35°17'52.82" N, 94°25'23.61" W; NE ¼, Sec 17, T7N, R32W. The facility will be temporarily storing small volumes of non-petroleum production fluids generated from washing out tanks and truck exteriors related to oil and gas production activities. ETSI will not be land applying any fluids. Excess solids and fluids will be transported to approved disposal facilities as necessary.

The subject property is surrounded by commercial businesses to the north and south; an undeveloped lot to the west; and Racetrack Road and U.S. Highway 271 to the east. Access is from Racetrack Road.

The nearest water body is an unnamed stream that flows eastward along a new residential development and then northeastwardly into Mill Creek. At its closest point, the stream is approximately 370 feet to the east of the site.

The permit application requires a response from the Department of Health. A 1:24,000 scale USGS topographic quad, county map, and legal description are enclosed for your reference. Please contact me with any questions, (501) 376-6333 or [jhemphill@thesoco.com](mailto:jhemphill@thesoco.com).

Cordially,

  
Jason Hemphill  
Geologist

1201 CYPRESS STREET  
NORTH LITTLE ROCK, AR 72114  
(501) 376-6333  
(501) 376-8715 FAX  
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7621 BALL ROAD  
FORT SMITH, AR 72908  
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800-643-2156

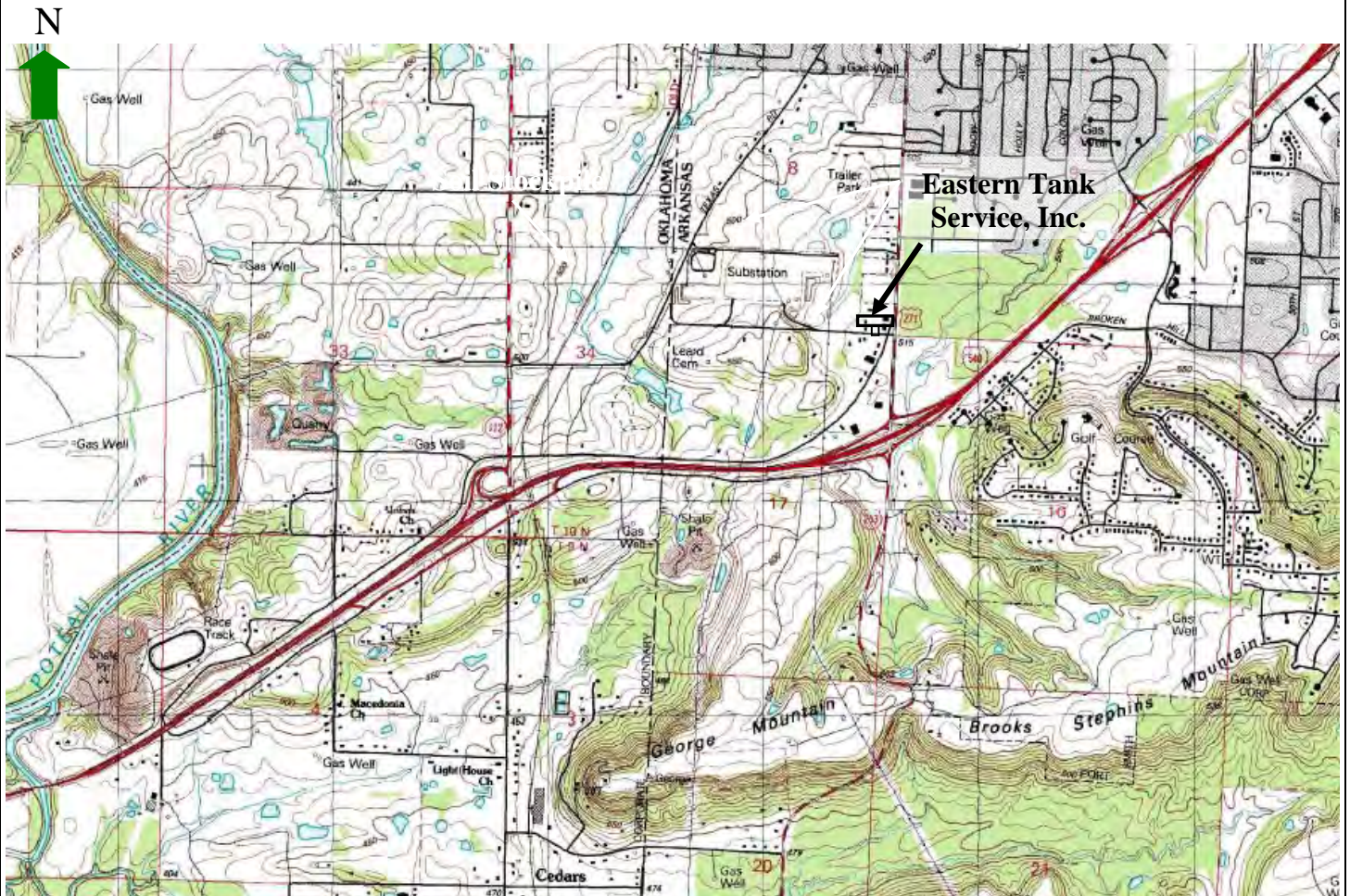


Figure 1  
Site Location Map

Eastern Tank Service, Inc.  
9100 Hwy 271 South  
Fort Smith, Arkansas

Eastern Tank Service, Inc.



Map title and company information.

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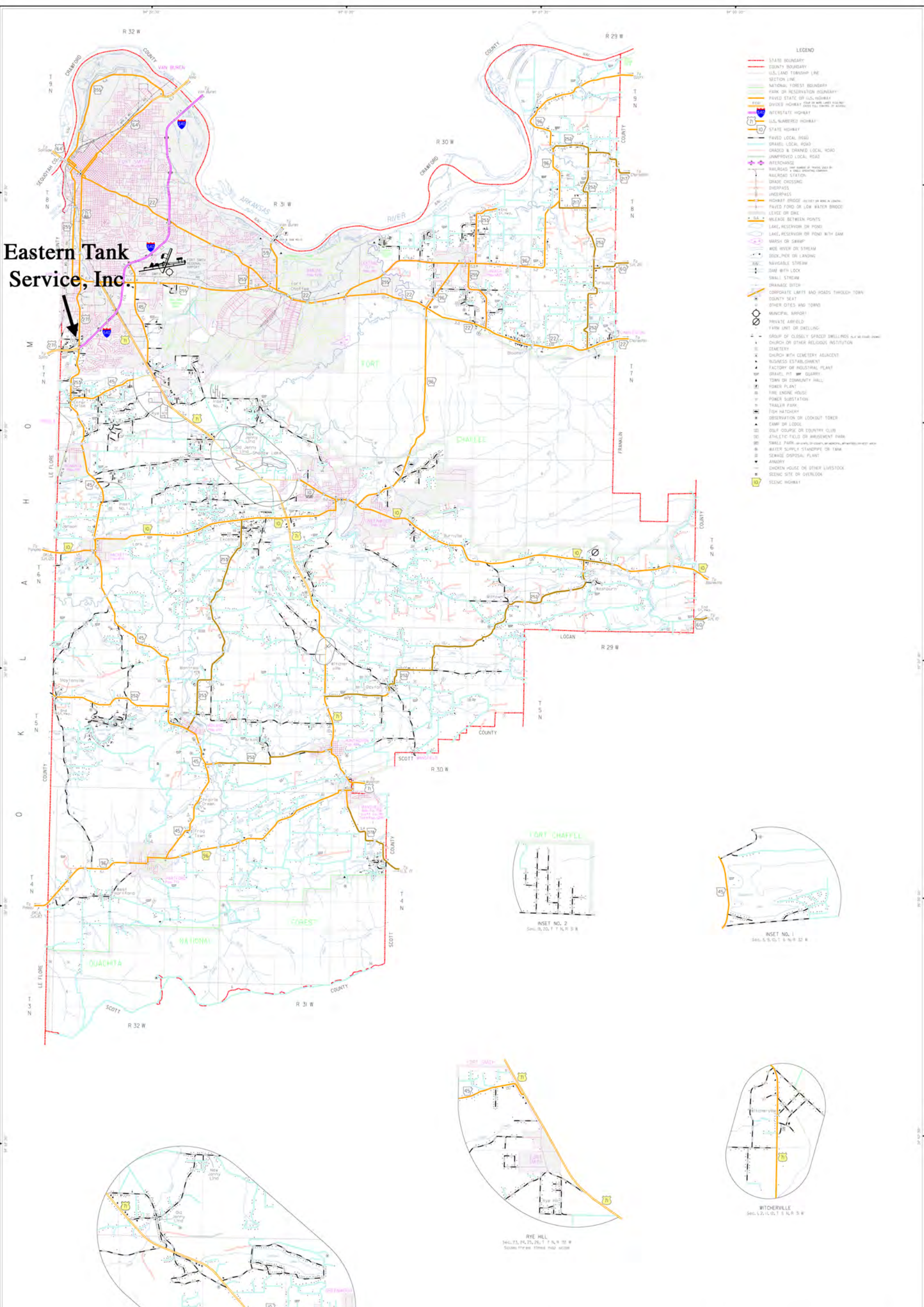
Map title and company information.

Map title and company information.

GENERAL HIGHWAY MAP

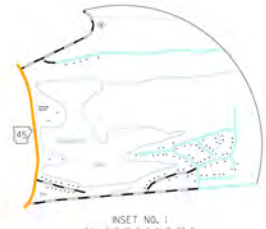
SEBASTIAN COUNTY, DISTRICT 4, ARKANSAS

AC20-65



LEGEND

- STATE BOUNDARY
- COUNTY BOUNDARY
- U.S. LAND TOWNSHIP LINE
- SECTION LINE
- NATIONAL FOREST BOUNDARY
- PARK OR RESERVATION BOUNDARY
- PAVED STATE OR U.S. HIGHWAY
- DIVIDED HIGHWAY (LEFT OR RIGHT SIDE)
- INTERSTATE HIGHWAY
- U.S. NUMBERED HIGHWAY
- STATE HIGHWAY
- PAVED LOCAL ROAD
- GRAVEL LOCAL ROAD
- GRADED & DRAINED LOCAL ROAD
- UNIMPROVED LOCAL ROAD
- INTERCHANGE
- RAILROAD (SOLID OR DOTTED LINE)
- RAILROAD STATION
- GRADE CROSSING
- OVERPASS
- UNDERPASS
- HIGHWAY BRIDGE (OVER OR UNDER)
- PAVED FORD OR LOW WATER BRIDGE
- LEVEE OR DIKE
- MILEAGE BETWEEN POINTS
- LAKE, RESERVOIR OR POND
- LAKE, RESERVOIR OR POND WITH DAM
- MARSH OR SWAMP
- WIDE WHEEL OR STREAM
- BOAT LIFT OR LANDING
- NAVIGABLE STREAM
- DAM WITH LOCK
- SMALL STREAM
- DRAINAGE DITCH
- CORPORATE LIMITS AND ROADS THROUGH TOWN
- COUNTY SEAT
- OTHER CITIES AND TOWNS
- MUNICIPAL AIRPORT
- PRIVATE AIRFIELD
- FARM UNIT OR DWELLING
- GROUP OF CLOSELY SPACED DWELLINGS (NOT IN TOWN)
- CHURCH OR OTHER RELIGIOUS INSTITUTION
- CEMETERY
- CHURCH WITH CEMETERY ADJACENT
- BUSINESS ESTABLISHMENT
- FACTORY OR INDUSTRIAL PLANT
- GRAVEL PIT OR QUARRY
- TOWN OR COMMUNITY HALL
- POWER PLANT
- FIRE ENGINE HOUSE
- POWER SUBSTATION
- TRAILER PARK
- FISH HATCHERY
- OBSERVATION OR LOOKOUT TOWER
- CAMP OR LODGE
- GOLF COURSE OR COUNTRY CLUB
- ATHLETIC FIELD OR AMUSEMENT PARK
- SMALL PARK (PLAYGROUND, BALLFIELD, etc.)
- WATER SUPPLY STANDPIPE OR TANK
- SEWAGE DISPOSAL PLANT
- ARMORY
- CHICKEN HOUSE OR OTHER LIVESTOCK
- SCENIC SITE OR OVERLOOK
- SCENIC HIGHWAY



# SEBASTIAN COUNTY ARKANSAS

GENERAL HIGHWAY MAP  
PREPARED BY  
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
PLANNING AND RESEARCH DIVISION  
IN COOPERATION WITH  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
SCALE: 1:62,500  
MILES



Copies of this map are available at a nominal fee from the Arkansas State Highway and Transportation Department, P.O. Box 204, Little Rock, Ark. 72203.



NOTICE: Encouragement of completed areas like Fish Lake. Map scale unless otherwise noted. Individual holes are provided for all areas. Information on this map is based on aerial photography taken in 1977. Map compilation completed 3-22-79. County map produced using Computer Aided Cartography. Map Revised 2-11-2000, Fort Smith, S.A. 29, Section 8, Reservoir. Map Revised 04-11-2000, S.A. 29, Section 8, Reservoir. Map Revised 04-02-2000, Reservoir a portion of S.A. 45, Section 1, East of Springdale. Map Revised 05-02-2000, Reservoir a portion of S.A. 20, Section 2, W.

Physical Projection: UTM, Datum: GRS80

**APPENDIX D**  
**CLOSURE COST ESTIMATE**

**Closure Cost Estimate**  
**Eastern Tank Services, Inc. Truck Washout System**  
**AFIN: 66-00296 Permit No. 3067-WR-1**

**LIQUIDS DISPOSAL**

	Volume (bbl)	Injection Well Disposal (\$/bbl)	Disposal Cost (\$)
Truck Wash Pit	218	\$4.00	872.00
Produced Water Tank contents	1200	\$4.00	4800.00
<b>Total</b>			<b>\$5,672.00</b>

	No. of Loads	\$/Load	Transportation Cost (\$)
Transport liquids to disposal facility	13	\$400.00	<b>\$5,200.00</b>

Trucking cost for haul to disposal well = \$100/hr; 160 mi. RT to inj. well @ 40 mph; 115 bbl/load.  
 Cost per load = 160 mi/40 mph X \$100/hr = \$400.00

	Volume (bbl)	Transport & Recycle/Disposal (\$/bbl)	Total Transport/Disposal Cost (\$)
Used Oil Tank contents	400	\$0.00	<b>\$0.00</b>

**Total Liquids Disposal Cost                    \$10,872.00**

**SOLIDS DISPOSAL**

	Solids (tons)	Landfill Disposal (\$/ton)	Disposal Cost (\$)
Truck Wash Pit	4.05	\$40.00	\$162.00
Crushed ASTs & HDPE liner	9	\$40.00	\$360.00
<b>Total</b>			<b>\$522.00</b>

Weight of wastes assumes 2700 lb/ C.Y.

	No. of Loads	\$/Load	Transportation Cost (\$)
Transport Solid Wastes to Landfill	6	\$150.00	<b>\$900.00</b>

Trucking cost for haul to landfill = \$90/hr; 65 mi. RT @ 40 mph to landfill; 20 C.Y./load.  
 Cost per load = 65 mi/40 mph X \$90/hr = \$146.25; Use \$150.00/load

**Total Solids Disposal Cost                    \$1,422.00**

**Closure Cost Estimate**  
**Eastern Tank Services, Inc. Truck Washout System**  
**AFIN: 66-00296 Permit No. 3067-WR-1**

**SLUDGE DISPOSAL**

	No. of Loads	Disposal (\$/load)	Disposal Cost (\$)
500 bbl frac tank	5	\$1,200.00	\$6,000.00
<b>Total</b>			<b>\$6,000.00</b>

	No. of Loads	\$/Load	Transportation Cost (\$)
Transport Sludge to El Reno, Oklahoma	5	\$1,150.00	\$5,750.00

Trucking cost for haul to disposal facility = \$100/hr; 460 mi. RT to disposal facility @ 40 mph; 115 bbl/load.  
 Cost per load = 460 mi/40 mph X \$100/hr = \$1150.00

**Total Sludge Disposal Cost                    \$11,750.00**

**ADDITIONAL TRANSPORT COSTS**

	No. of Loads	Transportation (\$)	Transportation Cost (\$)
Return drilling mud to owners	14	\$500.00	\$7,000.00

Trucking cost for haul to owner's facility = \$100/hr; 200 mi. RT to owner's facility @ 40 mph; 115 bbl/load.  
 Cost per load = 200 mi/40 mph X \$100/hr = \$500.00

		Transportation (\$)	Transportation Cost (\$)
Move frac tank to offsite facility	Lump sum	\$500.00	\$500.00

**Total Additional Transportation Cost                    \$7,500.00**

Equipment mobilization	lump sum	\$500.00
Demolition	12 hrs dozer/operator @ \$125.00/hr	\$1,500.00
SB-2 gravel	2 loads @\$150.00/load delivered	\$300.00
Compaction and Grading	4 hrs dozer/operator @ \$125.00/hr	\$500.00
<b>Total Demolition, Leveling, Backfill</b>		<b>\$2,800.00</b>

Project Management                    20% of project costs                    **\$6,868.80**

**Total Closure Cost                    \$41,212.80**