APPENDIX B

INDIVIDUAL SITE INFORMATION

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	1	Contact :	Jay Matz
Site Name:	Country Corner	Address :	4115 S. 133rd St
Address:	1700 S. Sycamore	City :	Omaha NE 68137
City :	Sioux Falls SD 57192	Phone :	(402)330-1440
County :	Minnehaha		

Legal Description of Property: South 250 feet of Lot 1, except County Auditor's Tract 1 contained therein, of Tract 3 of Carriage Villa in the Southwest Quarter of the Southwest Quarter (SW 1/4, SW1/4) of Section 24, Township 101 North, Range 49 West of the 5th P.M., Minnehaha County South Dakota.

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☐	Documentation of storage system installations, replacements, and upgrades.	☐	☐	☐
☒	Dates of upgrades or replacement of the storage tank systems.	☒	☐	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☐	☒	☒
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	1	12,000 gal	1	17,000 gal *	1	20,000 gal
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

* Compartmented

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Modern Welding Co. of Iowa
Tank Installation Date:	2000
Tank Installer Name:	Sioux Equipment

Piping Manufacturer Name:	Advanced Polymer Tech
Piping Installation Date:	2000
Piping Installer Name:	Sioux Equipment

Notes

LINE TIGHTNESS TEST REPORT FORM

Testing Company :Dockendorf Equipment	Phone Number: (605) 336-2130
Name of Person(s) Performing Test: Krage Kanally	Tester Certification Number and Expiration Date: #78-6600; Apr 8, 05
Manufacturer of Test Equipment / Model or Version: Estabrook Ezy Check	
Equipment Threshold, GPH: 0.01	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: Apr 13, 04	

				Pressure Test														Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	50	2"/85'	0900	2	.024	3	.044	2	.024	2		1		1		1045	P	1230	60	1430	P
2	50	2"/120'	1300	3	.044	1	.014	1	.014	0		0		0		1445	P	1245	60	1430	P
3	50	2"/130'	1545	0		0		0		0		0				1715	p	1300	60	1430	P
4	50	2"/50'	1720	0		0		0		0		0					p	0900	60	1130	P
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☒	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☐	Single Wall		
☐	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☒	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☒	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other Approved	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☒	Pea Rock				
☐	Other				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Dispenser Sump(s)
☐	Fiberglass	☐	Impressed Current System	☐	No Dispenser Sumps
☐	Composite	☐	Single Wall	☐	Unknown
☐	Unprotected Steel	☒	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☒	Piping Sump(s)
☒	Flexible Synthetic	☒	Secondary Containment w/ Rock Guard	☐	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☒	Pea Rock	☐	Bulk Product		
☐	Other	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☒	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☒	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☒	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☒	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☒	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: NA / / month/day/year
Estimated number of gallons discharged:

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☐	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This system was new in 2000 and the station closed in early 2004. All site diagrams; equipment related correspondence, operating procedures and specifications; records of repairs and maintenance; and records of compliance checks were requested from the operator prior to station closure. Information received from the operator included an installation proposal, site questionnaire, and partial product inventory slips/sheets.

Documentation was not sufficient to determine if the UST system was being adequately maintained. No as-built drawings were available. No documentation was available to determine if lines had been leak tested or if leak detectors had received required testing. Although the upgraded system was equipped with electronic leak detectors and automatic tank gauging sensors the required in-tank leak test reports were available for only two of the 44 months of station operation. Although not required, monthly inventories (stick sheets) were prepared through July of 2003. Frequently, readings were taken less than 20 days each month.

Precision and helium testing of lines revealed no leaks, nor were vapors or discoloration evidenced in tank and piping backfill.

However, questions arose about pipe installation. When piping is installed into a sump this manufacturer's instructions requires removal of the scuff guard at or outside the sump wall. Scuff guards were observed inside most sumps. Piping often entered a dispenser sump, serviced a standpipe and then left the sump in a different direction. No by-pass tubes connected the interstitial spaces of the entering and departing lines. Also, no sensor connections were found in the dispenser sumps. As a result, line leaks could collect unnoticed in the dispenser sump (rather than the tank containment sump where a sensor was placed) unless a conscientious program of dispenser sump inspection was followed.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Country Corner

Street Address: 1700 South Sycamore Ave City: Sioux Falls

Owner: Midwest Oil Company/Brad Dyar Phone #: 605-336-3337

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	12,000	Gasoline	Good
2	17,00	Gasoline	Good
3	20,000	Diesel	Good

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 75'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 6 Number of islands removed: 6

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No X If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: None Loose cubic yards of fill used: 343

The tank basin was backfilled with sand.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

This site has already been assessed and the lithology of this area can be viewed by going to DENR's file number 2000.066. Backfill material was not impacted; however, the native soils were impacted from a previous release. These soils were excavated out by reaching as far down as the backhoe could and keeping within the allowable horizontal distance(two –three feet)/bucket width. Since this site has already been assessed only one sample was taken, after over excavation, from below each tank.

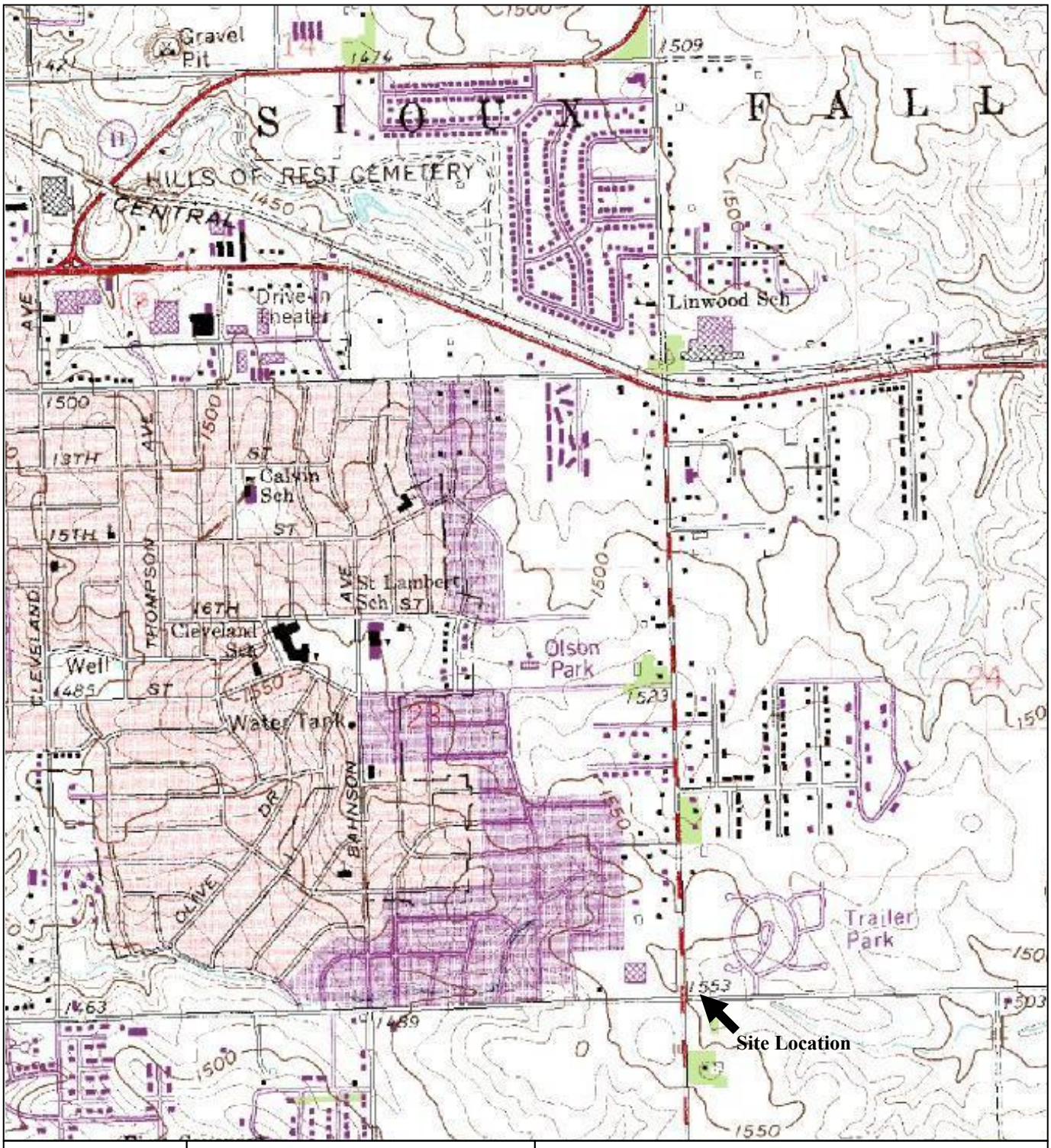
Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

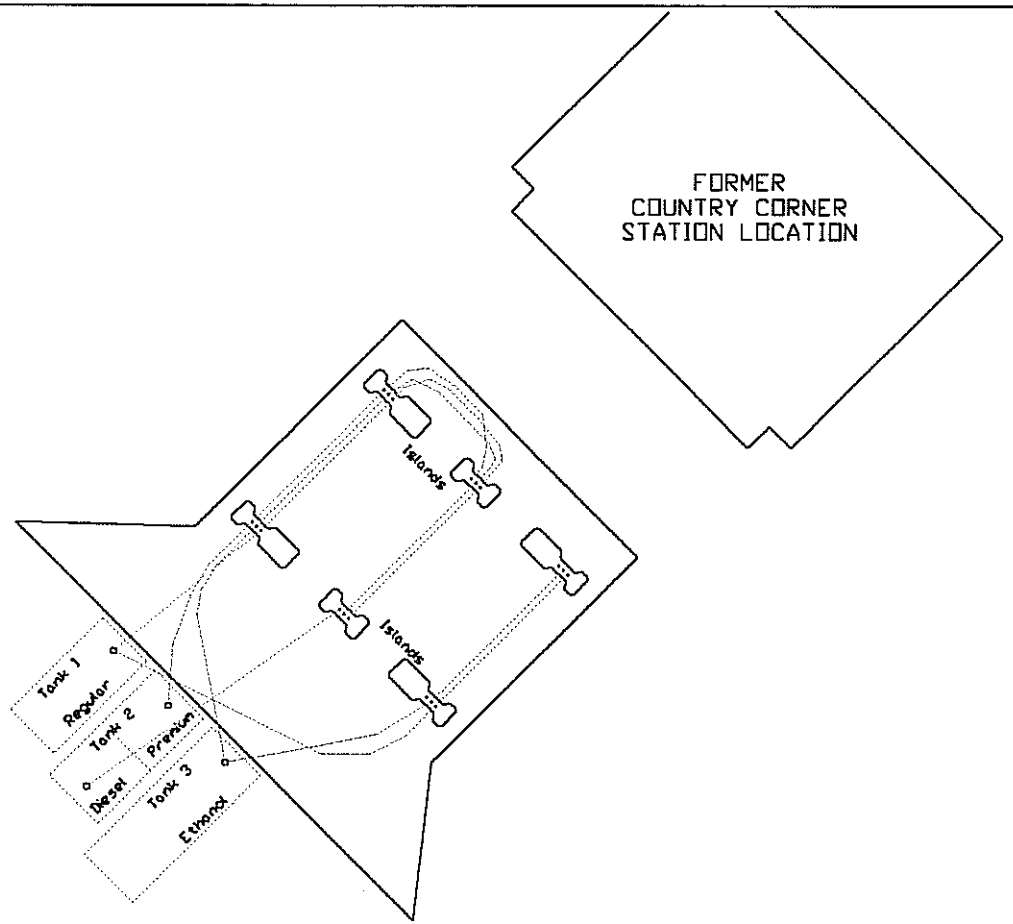
Table 1
Analytical Results for Soil Samples
Country Corner
Sioux Falls, South Dakota

Sample ID	Depth in Feet	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	TPH as Fuel Oil	Naphthalene
Tank 1	16	**2.19**	1.35	**16.6**	51.2	**671.0**		
Tank 2	18	<.20	<.20	<.20	<.20	<10.0		
Tank 3	18	<.20	<.20	<.20	<.20	<10.0		
Tier 1 Action Levels	--	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



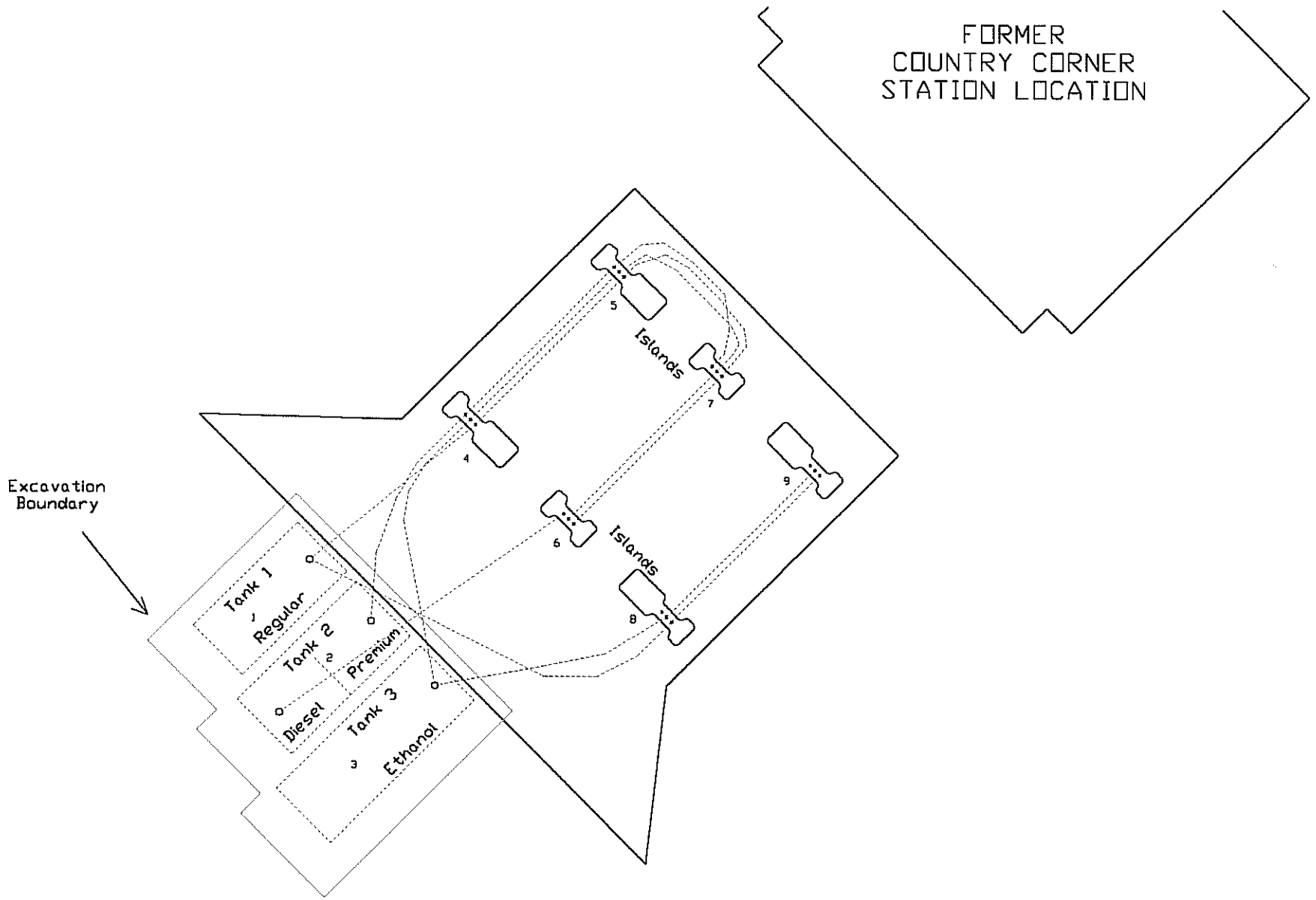
TPSS #1	Figure 1
Topographic Site Location Map Country Corner 1700 S. Sycamore Street Sioux Falls, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



SYCAMORE AVENUE

EAST 26TH STREET

PSS# 01	FIGURE 2	Scale: 1"=30'
Country Corner 1700 South Sycamore Avenue Sioux Falls, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 01	FIGURE 3	Scale: 1"=20'
Country Corner 1700 South Sycamore Avenue Sioux Falls, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-303-3

PROJECT:
COUNTRY CORNER

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0419

DATE: April 27, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: April 19 , 2004
DATE RECEIVED: April 19, 2004

SAMPLER: Scott Bickler SD DENR

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
TANK-1 16'	1470-04					
	4/26/2004	EPA 8020	Benzene	2.19	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Toluene	1.35	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Ethylbenzene	16.60	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Xylenes	51.20	mg/kg	0.2 mg/kg
	4/26/2004	California USGS	TPH as Gasoline	671.00	mg/kg	10 mg/kg
TANK-2 18'	1471-04					
	4/26/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	4/26/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
TANK-3 18'	1472-04					
	4/26/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	4/26/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	4/26/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-303-3

PROJECT:
COUNTRY CORNER

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0419

DATE: April 27, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: April 19 , 2004
DATE RECEIVED: April 19, 2004

SAMPLER: Scott Bickler SD DENR

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

GEOTEK ENGINEERING
& TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, South Dakota 57104
605-335-5512 • FAX 605-335-0773

ANALYTICAL INVOICE

PROJECT # : 04-303-3

DATE: April 27, 2004

INVOICE # : DENR0419

PROJECT:
COUNTRY CORNER

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

Description	Quantity	Unit Price	Extention
BTEX only	0	$80.00	$0.00
TPH As Gasoline plus BTEX	3	$100.00	$300.00
TPH As Diesel/Naphthalene Screen	0	$100.00	$0.00
		Invoice Total	$300.00

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

DENR0419

Page ____ of ____

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: Country Corner 04-303-3
Report Mail Address:	Contact Name, Phone, Fax, E-mail: Scott Bickler
Invoice Address: Terry Florente, DENR 523 E Capitol Ave Pierre SD 57501-3182	Invoice Contact & Phone #: (605) 773-3296
	Purchase Order #:
	ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A Air, W Water, S Soils/Solids, V Vegetation, B Bioassay, O Other)	BTEX	TPH-G	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Lab ID
1	Tank 1 16' bg	4-17-04	2 pm	1-S	X	X		X		1470
2	Tank 2 - 18' bg	4-19-04	11:15 am	1-S	X	X		X		1471
3	Tank 3 - 18' bg	4-19-04	1:05 pm	1-S	X	X		X		1472
4										
5										
6										
7										
8										
9										
10										

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments: old contaminated soils

Receipt Temp ____ ° C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

LABORATORY USE ONLY

MAY 2004 RECEIVED DENR Watershed Protection Section

Custody Record MUST be Signed

Relinquished by: Scott Bickler	Date/Time: 4-19-04	Shipped by:	Received by:
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 4-19-04 1:55

Sample Disposal: Return to client: ____ Lab Disposal: X

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	2	Contact :	Harlan Wehde
Site Name:	Bill's Texaco	Address :	RR 2
Address:	101 S. Splitrock Boulevard	City :	Garretson
City :	Brandon	Phone :	(605) 332-0106
County :	Minnehaha		

Legal Description of Property: East 217.95 feet, North 199.9 feet, Ode Tract 1, Southeast Quarter (SE 1/4) of Section 34, Township 102 North, Range 48 West of the 5th P.M., Minnehaha County South Dakota

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☐	Documentation of storage system installations, replacements, and upgrades.	☐	☐	☐
☐	Dates of upgrades or replacement of the storage tank systems.	☐	☐	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☐	Storage tank fuel inventory, including tank water level.	☐	☐	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	2	8,000 gallon				
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Brown-Minneapolis Tank
Tank Installation Date:	1992
Tank Installer Name:	Sioux Equipment

Piping Manufacturer Name:	Ameron
Piping Installation Date:	1992
Piping Installer Name:	Sioux Equipment
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :Dockendorf Equipment	Phone Number: (605) 336-2130
Name of Person(s) Performing Test: Krage Kanally	Tester Certification Number and Expiration Date: #78-6600; Apr 8, 05
Manufacturer of Test Equipment / Model or Version: Estabrook Ezy Check	
Equipment Threshold, GPH: 0.05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: 4-21-04	

Pressure Test																	Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min						
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	50	2"/40	1415	0		0		0		0		0			0	1545	P	1730	40	1800	P
2	50	2"/40	1550	0	0	1	.014	0		0		0		0	.004	1720	P	1735	40	1800	P
3																					
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other Approved	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other (Washed Sand)				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☐	Pressurized	☒	Single check valve
	Bedding Material	☒	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other (Washed sand)	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: N/A / / month/day/year
Estimated number of gallons discharged:

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☐	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This location had been the site of a service station since the early 1960s. The station had two separate underground fuel storage tank systems; one system for diesel fuel and a separate gasoline system with its own tank basin, lines and islands. The previous version of diesel tanks had been replaced in 1992 and consequently contamination was found and remediated and that release closed. The current diesel system with two-8,000gallon STiP3 tanks was installed at that time. The gasoline system was upgraded at a later date.

The station owner planned to develop this property as a strip mall. The construction of the proposed buildings required that the diesel system be removed first. (The gasoline UST system was to become incorporated into the strip mall.) The owner stopped using both the gas and diesel systems in early Sep 03.

No as-built drawings, installation, operation, maintenance, or inspection documents were available to study personnel.

The most recent USTs were bedded in washed sand. (Native soils in this area were predominantly "sugar" sand below an 18" layer of topsoil.) The tanks were in very good shape when removed and the single item noted was the condition of anodes on the end of one tank. The shipping covers had not been removed although their labels stated they should be removed prior to backfilling."

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Bill's Texaco

Street Address: 101 Splitrock Blvd City: Brandon

Owner: Bill Wehde Phone #: 332-0106

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	8,000	Diesel	Good
2	8,000	Diesel	Good

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 75'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 1 Number of islands removed: 1

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No X If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: none Loose cubic yards of fill used: 112

The tank basin consisted of sand.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin consisted of sand. Native soils in this area consist of sand. Because this site has already been assessed regarding a previous release(see DENR's file number 90.234 for site lithology) only one sample was taken from below each tank. The sample was taken two feet below the bottom of the tanks at the end that that contained the fill pipe.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

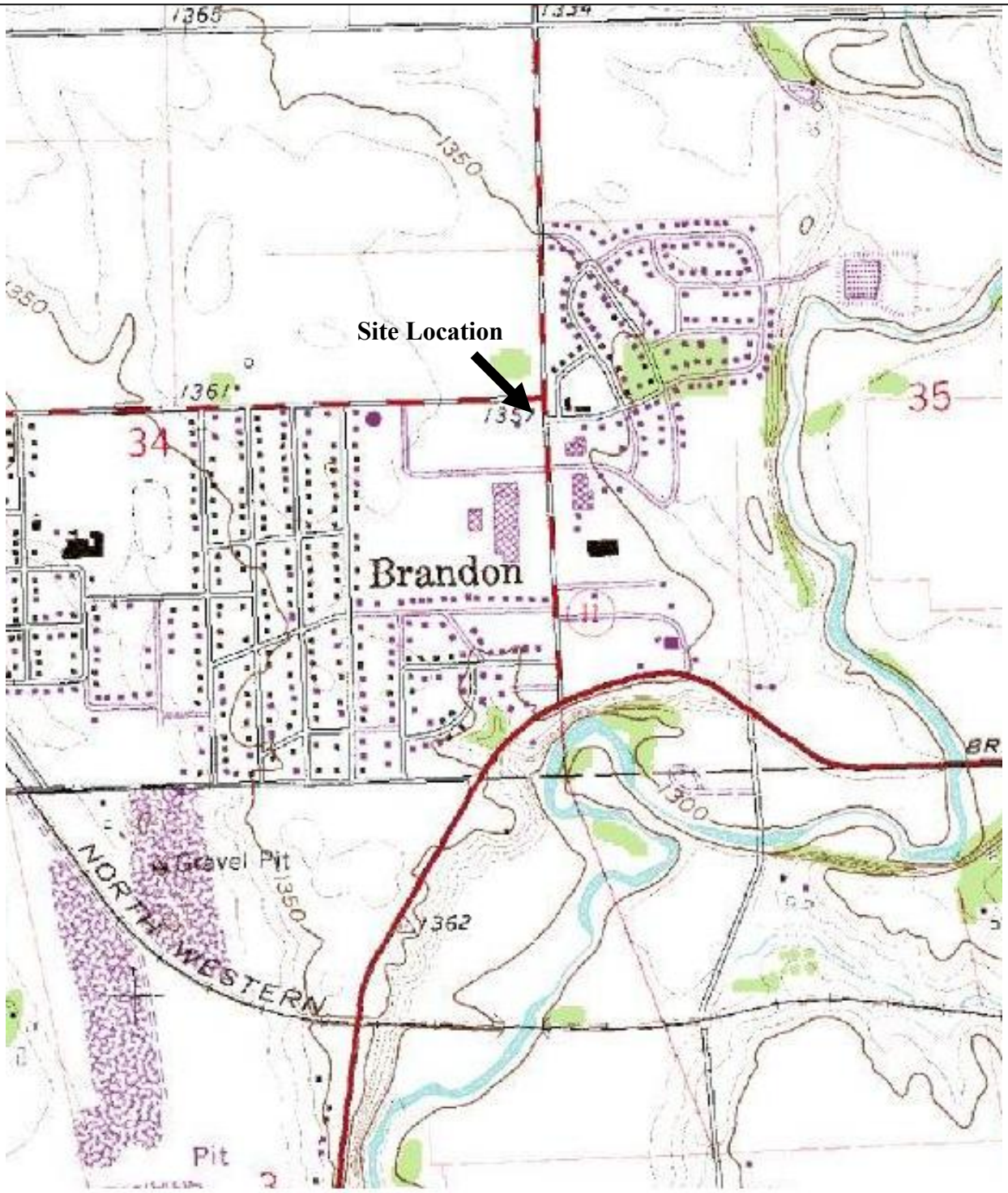
Table 1
PID Readings for Selected Soil Samples
Bill's Texaco
Brandon, South Dakota

Sample ID	Location	Depth (ft)	PID
West Tank	East End	13	ND
East Tank	West End	13	ND
Island	West Dispenser	2 1/2	ND

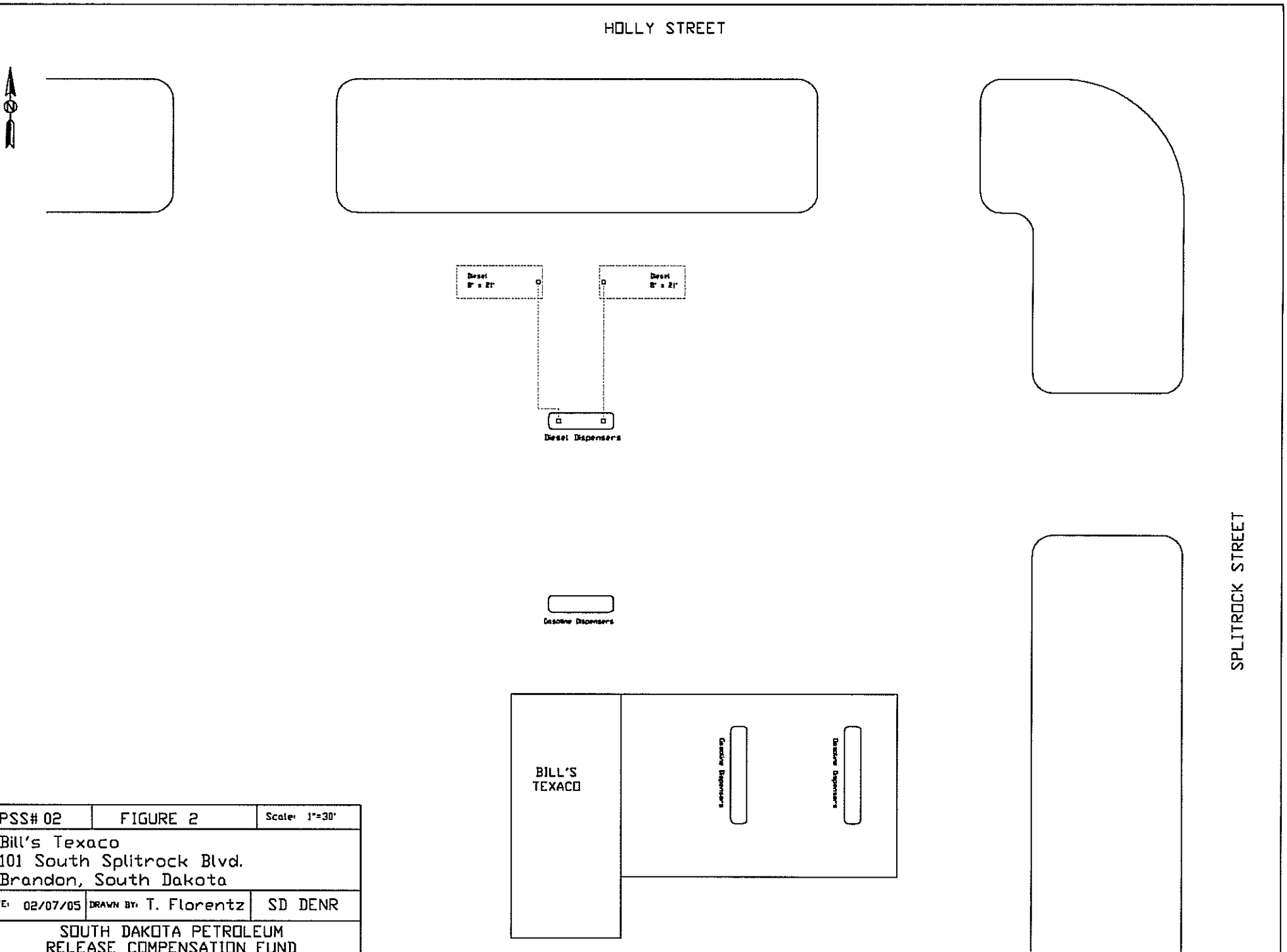
Table 2
Analytical Results for Soil Samples
Bill's Texaco
Brandon, South Dakota

Sample ID	Depth in Feet	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	TPH as Fuel Oil	Naphthalene
West Tank	13						<10.0	<1.0
East Tank	13						<10.0	<1.0
Tier 1 Action Levels	--	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

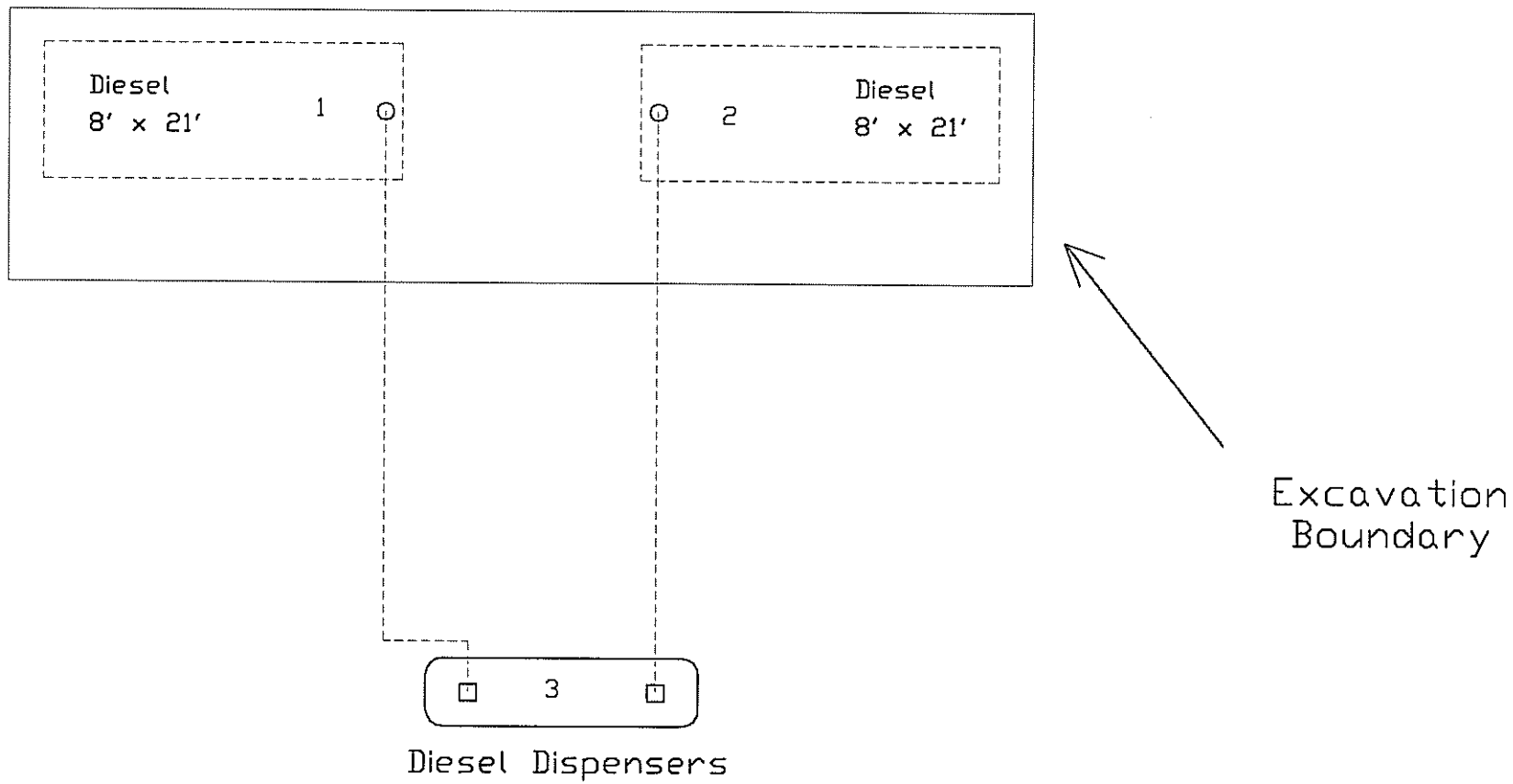
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #2	Figure 1
Topographic Site Location Map Bill's Texaco 101 S. Splitrock Boulevard Brandon, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



PSS# 02	FIGURE 2	Scale: 1"=30'
Bill's Texaco 101 South Splitrock Blvd. Brandon, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 02	FIGURE 3	Scale: 1"=10'
Bill's Texaco 101 South Splitrock Blvd Brandon, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-368-3

PROJECT:
BILL'S TEXACO
BRANDON, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0422

DATE: May 04, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: April 22 , 2004
DATE RECEIVED: April 22, 2004

SAMPLER: Scott Bickler SD DENR

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
W TANK E END 13'	1528-04					
	4/26/2004	EPA 8020	Naphthalene	<1.00	mg/kg	1 mg/kg
	4/26/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg
E TANK W END 13'	1529-04					
	4/26/2004	EPA 8020	Naphthalene	<1.00	mg/kg	1 mg/kg
	4/26/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

Chain of Custody and Analytical Request Record

ENERGY LABORATORIES

Page 1 of 1

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

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Company Name: DENR	Project Name, PWS #, Permit #, Etc.: Bill's Texaco, Brandon	C4-379-3
Report Mail Address: Terry Florentz, DENR, 523 E Capitol Ave, Pierre, SD 57501-3182	Contact Name, Phone, Fax, E-mail: Scott Bickler	Sampler Name if other than Contact:
Invoice Address: same as ↑	Invoice Contact & Phone #: (605) 773-3296	Purchase Order: ELI Quote #:

MAY 2004 RECEIVED DENR Ground Water

Report Required For: POTW/WWTP ☐ DW ☐

Other ☐

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ☐

EDD/EDT ☐ Format ☐

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegetation Bioassay Other / MATRIX	ANALYSIS REQUESTED: TPH-diesel	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments:
1 ~~West tank under west end~~	~~2004~~ 4-					X		
2 west tank under east end	4-22	3:10p	1-S	X		X		1528
3 13'↓								
4 ~~East tank under east end~~	4-							
5 East tank under west end	4-22	3:30p	1-S	X		X		1529
6 13'↓								
7								
8								
9								
10								

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Receipt Temp ____ °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by: Scott J Bickler	Date/Time: 4/ /04 3:57p	Shipped by:	Received by: John W. Byerly 4/22/04 Date/Time: 4:00 PM
Relinquished by:	Date/Time:	Shipped by:	Received by: 4/23/04 Date/Time: 0710

Sample Disposal: Return to client: ____ Lab Disposal: X

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	3	Contact :	Russell Ripley
Site Name:	R&M Convenience	Address :	116 Sunshine Ave.
Address:	1329 N. Main	City :	Luverne MN 56156
City :	Sioux Falls SD 57104	Phone :	(605) 331-1120
County :	Minnehaha		

Legal Description of Property: Summit Addition, Block 14, East 100 feet of Lot 1, and Lot 2, except H-1, in the City of Sioux Falls, Minnehaha County, South Dakota

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☐	☒	☒
☒	Dates of upgrades or replacement of the storage tank systems.	☐	☒	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☒	Repair, operation, and maintenance records.	☐	☒	☐
☒	Storage tank fuel inventory, including tank water level.	☐	☒	☒
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☒	SD DENR Inspection Records	☐	☒	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☐	Underground Storage Tank	2	6,000				
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Huron Culvert and Tank
Tank Installation Date:	1984
Tank Installer Name:	Sioux Equipment

Piping Manufacturer Name:	unknown
Piping Installation Date:	1984 est.
Piping Installer Name:	unknown
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :Dockendorf Equipment	Phone Number: (605) 336-2130
Name of Person(s) Performing Test: Krage Kanally	Tester Certification Number and Expiration Date: #78-6600; Apr 8, 05
Manufacturer of Test Equipment / Model or Version: Estabrook Ezy Check	
Equipment Threshold, GPH: 0.05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: Apr 26, 04	

Pressure Test																		Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	50	2"/50'	0915	1	.014	1	.014	1		0		1		0	.007	1100	P		40		P
2	50	2"/58'	1055	0		0		0		0		0		0	0	1225	P		40		P
3																					
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other Approved	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other (Quartzite dust)				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☒	Galvanized Steel	☒	Sacrificial Anodes	☐	Dispenser Sump(s)
☐	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other (Quartzite dust)	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☒	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☐	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☒	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 03/30/2004month/day/year
Estimated number of gallons discharged:

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☒	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☒	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☒	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☒ No ☐ Unknown
If so, what was the method relied upon for compliance purposes? Electric Line Leak Detector - In use for current system but leak was attributable to prior system. System was calibrated for .2 gph.

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☒	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:

Explanation:

Upon removal of the USTs for study purposes it was determined that the USTs had been placed into contaminated soil. (The backfill was clean but soils outside the piping and tank backfill were contaminated.) Therefore it was assumed that spills/overfills/and leaks had occurred at previous tanks at this location.

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☒	Unknown
				☐	Other

Explanation:

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☒	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This location had been a gas station for many years. The current system of two 6,000 gallon tanks was 22 years old. These tanks were asphalt coated steel that had cathodic protection added at a later date to meet the federal upgrade requirement. However, the system was not in compliance with city fire rules and the owner had the option of replacing it or losing his business license. He elected to replace the system.

No as-built drawings were available and nor were complete installation, maintenance, or inspection documents. The electronic line leak detectors were rated to detect a leak rate of .2 gph VS. the necessary .1 GPH.

Manual tank gauging was done but these records were not available on-site. No records were available to show these had undergone SIR. Records of periodic leak detector or cathodic protection checks were unavailable.

Irregularities were found in system installation. Fire/shear valves were not anchored to a solid frame below the dispenser. An underground line for one of the tank vents was not connected and appeared to not have been connected when installed.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: R & M Store

Street Address: 1329 N Main Street City: Sioux Falls

Owner: Russell Ripley Phone #: 605-331-1120

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	6,000	Gasoline	Good
2	6,000	Gasoline	Good

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 120'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 1 Number of islands removed: 1

If the pump islands were not removed, please explain why. Two dispensers/one island

Was groundwater encountered in the excavation? Yes _____ No X If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 430 Loose cubic yards of fill used: 514

The tank basin was backfilled with sand.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin consisted of sand. A clay matrix with discontinuous sand stringers made up the side walls and floor of the over excavated tank basin. Visually impacted backfill and clay soils were removed from the tank basin to a depth ranging between 15 and 17 feet. Visually impacted soils remained along the north, east and southeast walls. Visually impacted soils remain in the piping trench and under the island also. The piping trench and island area contained a lot of abandoned piping and rubble type of material like wood and cement blocks and glass.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

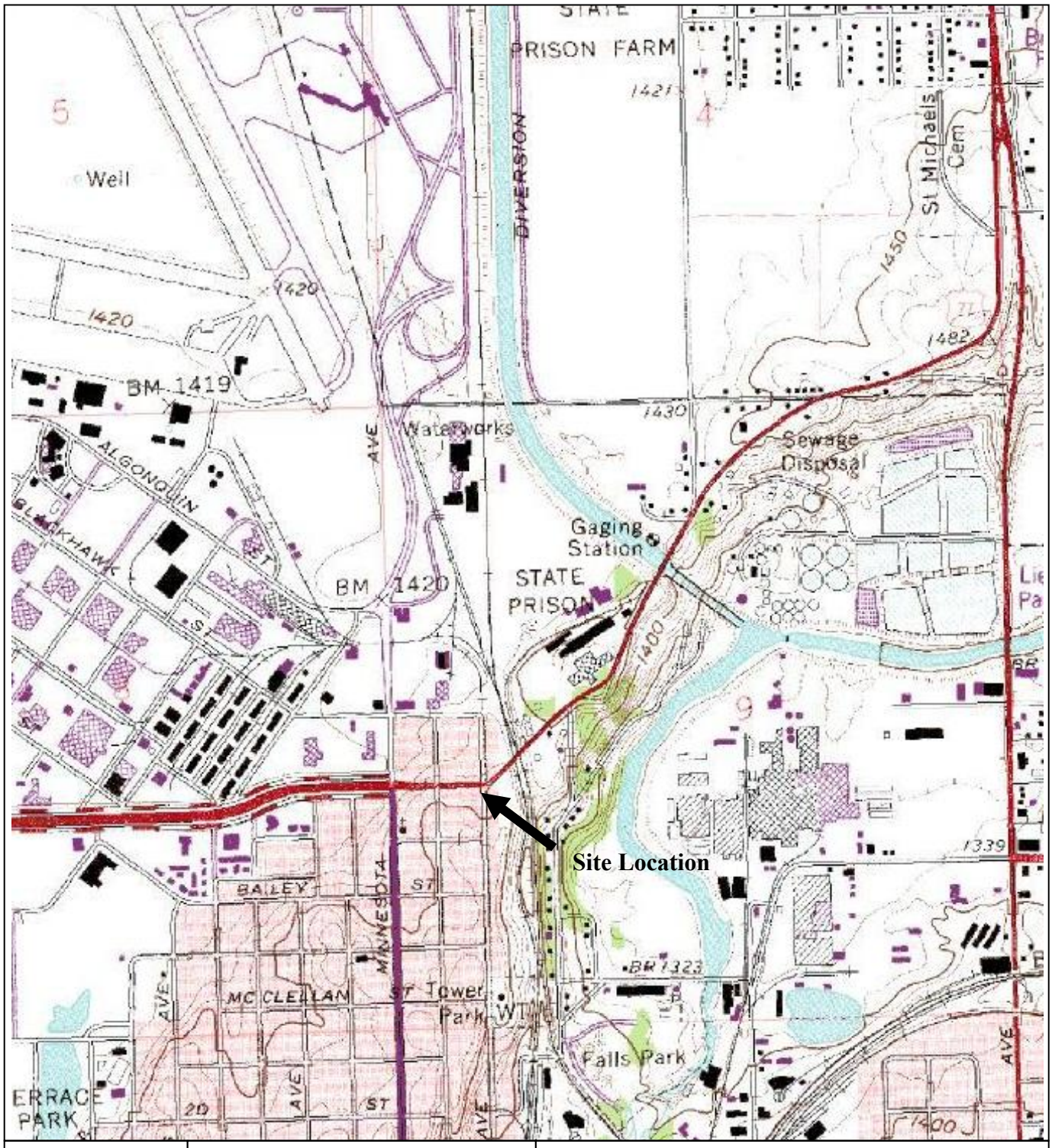
Table 1
PID Readings for Selected Soil Samples
R & M Store
Sioux Falls, South Dakota

Sample ID	Location	Depth (ft)	PID
1	North Side Wall	9.5	150
2	North Tank West End	16	8
3	South Tank West End	17	5
4	South Tank East End	16	<5
5	North Tank East End	15	<5
6	East Side Wall South Half	8	40
8	Middle of Island	5	400
	WO Tank South of Bldg	6.5	ND

Table 2
Analytical Results for Soil Samples
R & M Store
Sioux Falls, South Dakota

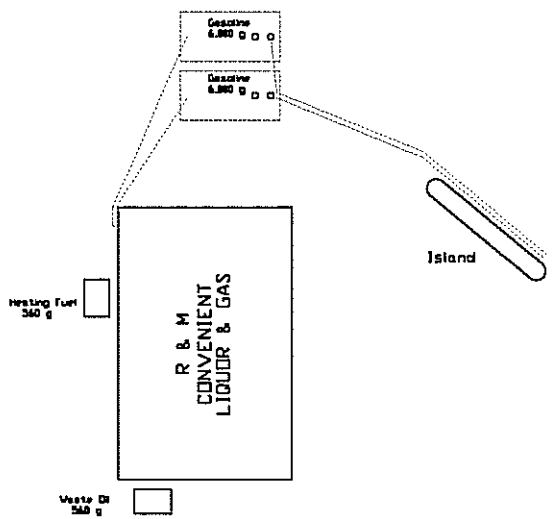
Sample ID	Depth	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Waste Oil
1	9.5	**1.68**	2.54	1.51	6.90	**737.0**		
2	16	<.20	<.20	<.20	<.20	<10.0		
3	17	<.20	<.20	<.20	<.20	<10.0		
4	16	<.20	<.20	<.20	<.20	<10.0		
5	15	<.20	<.20	.82	3.82	33.4		
6	8	<.20	<.20	<.20	<.20	<10.0		
7 Under Piping ½ way between Tanks & Island		**5.34**	**21.7**	**29.3**	**1161**	**9206**		
8	5	**5.41**	**32.5**	**22.8**	102	**1072**		
WO Tank South of Bldg	6.5							<10
Tier 1 Action Levels		**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	--	**500.0**

Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



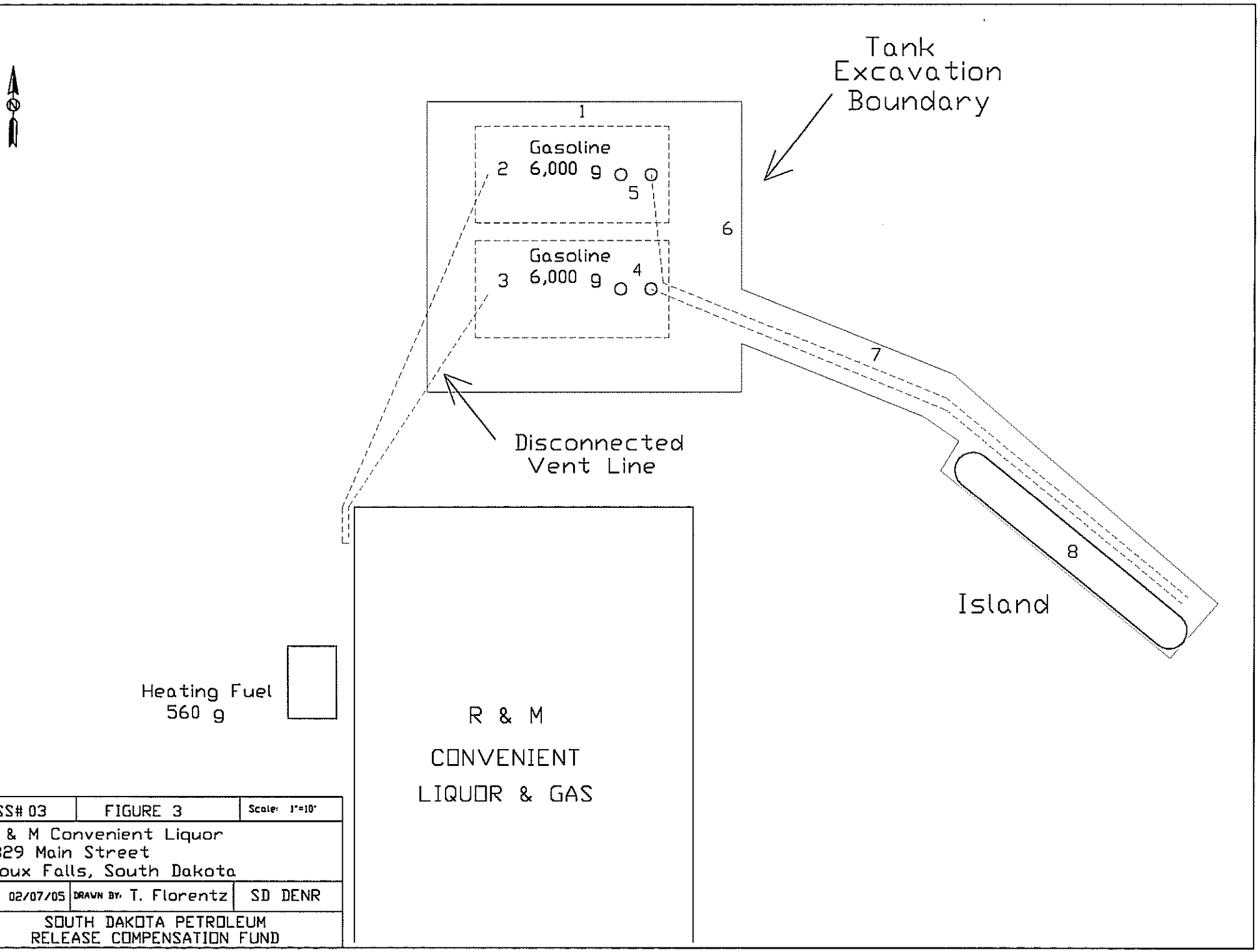
TPSS #3	Figure 1
Topographic Site Location Map R&M Convenience 1329 Main Street Sioux Falls, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**

RUSSELL STREET



MAIN AVENUE

PSS# 03	FIGURE 2	Scale: 1"=30'
R & M Convenient Liquor 1329 Main Street Sioux Falls, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz SD DENR	
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 03	FIGURE 3	Scale: 1"=10'
R & M Convenient Liquor 1329 Main Street Sioux Falls, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-351-3

PROJECT:
R & M STORE
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501

PHONE:

CHAIN OF CUSTODY # DENR0428

DATE: May 05, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: April 28 , 2004
DATE RECEIVED: April 28, 2004

SAMPLER: Scott Bickler SD DENR

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
W.O. TANK S OF BLDG. 6.5'	1549-04					
	4/29/2004	California USGS	TPH as Waste Oil	<10.00	mg/kg	10 mg/kg
MID OF ISLAND 5'	1550-04					
	5/3/2004	EPA 8020	Benzene	5.41	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Toluene	32.50	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Ethylbenzene	22.80	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Xylenes	102.00	mg/kg	0.2 mg/kg
	5/3/2004	California USGS	TPH as Gasoline	1072.00	mg/kg	10 mg/kg
N SIDE WALL 9.5'	1551-04					
	5/3/2004	EPA 8020	Benzene	1.68	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Toluene	2.54	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Ethylbenzene	1.51	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Xylenes	8.90	mg/kg	0.2 mg/kg
	5/3/2004	California USGS	TPH as Gasoline	737.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-351-3

PROJECT:
R & M STORE
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0428

DATE: May 05, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: April 28 , 2004
DATE RECEIVED: April 28, 2004

SAMPLER: Scott Bickler SD DENR

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
N TANK W END 16'	1552-04					
	5/3/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
S TANK W END 17'	1553-04					
	5/3/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
S TANK E END 16'	1554-04					
	5/3/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-351-3

PROJECT:
R & M STORE
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0428

DATE: May 05, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: April 28 , 2004
DATE RECEIVED: April 28, 2004

SAMPLER: Scott Bickler SD DENR

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
N TANK E END 15'	1555-04					
	5/3/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Ethylbenzene	0.82	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Xylenes	3.82	mg/kg	0.2 mg/kg
	5/3/2004	California USGS	TPH as Gasoline	33.40	mg/kg	10 mg/kg
E WALL S SIDE 8'	1556-04					
	5/3/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	5/3/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
UNDER PIPING BETWEEN TANKS 4'	1557-04					
	5/3/2004	EPA 8020	Benzene	5.34	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Toluene	21.70	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Ethylbenzene	29.30	mg/kg	0.2 mg/kg
	5/3/2004	EPA 8020	Xylenes	1161.00	mg/kg	0.2 mg/kg
	5/3/2004	California USGS	TPH as Gasoline	9208.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-351-3

PROJECT:
R & M STORE
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0428

DATE: May 05, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: April 28 , 2004
DATE RECEIVED: April 28, 2004

SAMPLER: Scott Bickler SD DENR

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

GEOTEK ENGINEERING
& TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, South Dakota 57104
605-335-5512 • FAX 605-335-0773

ANALYTICAL INVOICE

PROJECT # : 04-351-3

DATE: May 05, 2004

INVOICE # : DENR0428

PROJECT:
R & M STORE
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501

PHONE:

Description	Quantity	Unit Price	Extention
BTEX only	0	$80.00	$0.00
TPH As Gasoline plus BTEX	8	$100.00	$800.00
TPH As Diesel/Naphthalene Screen	1	$100.00	$100.00
		Invoice Total	$900.00

South Dakota Department of Water and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

CHAIN OF CUSTODY RECORD

DENR 0428

PROJ NO	PROJECT NAME
04-351-3	R & M Store, 1329 N. Main, SF 57104

SAMPLERS (Signature): Scott J Bickler

Soil samples

REMARKS: Send bill & results Terry Florentz DENR-GWQ, 523 E Capitol Ave Pierre, SD 57501-3182

	~~SEAT~~ NO.	DATE 2004	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH-G	BTEX	TPH-waste oil				REMARKS
49		4-28	1130 pm		X	Waste oil tank south of building sample depth 6.5'	1			X				
50	8	4-28	4:10		X	under middle of island @ 5'	1	X	X					discolored Pid 400
51	1	4-28	2:20 p		X	North side wall @ 9.5'	1	X	X					discolored Pid 150
52	2	4-28	12:05 p		X	Bottom N tank west end @ 16'		X	X					Pid 8 ppm
53	3	4-28	11:50 a		X	Bottom S tank west end @ 17'	1	X	X					Pid 5 ppm
54	4	4-28	3:38 p		X	Bottom S tank east end @ 16'	1	X	X					< 5 ppm
55	5	4-28	3:30 p		X	Bottom N tank east end @ 15'	1	X	X					< 5 ppm
56	6	4-28	3:45 p		X	E side wall south side @ 8'	1	X	X					discolored PID 40 ppm
57	7	4-28	3:54		X	under piping 1/2 between tanks & island @ 4'	1	X	X					discolored

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Scott J Bickler	4/28/04				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) [signature]	Date/Time 4-28-04 4:40	Remarks:	

MAY 2004 RECEIVED DENR Division of Water Quality Resources

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Insepcted Facility

Split Samples ☐ Accepted ☐ Declined _____ Signature

SD—

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	4	Contact :	Ivan Vomacka
Site Name:	Elkton Farmer's Union	Address :	100 Elk Street
Address:	100 Elk Street	City :	Elkton
City :	Elkton	Phone :	605-542-2371
County :	Brookings		

Legal Description of Property: W 70' LOT 16, ALL LOTS 17-18, BLOCK 2 ELKTON TOWN

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☒	☐	☐
☐	Dates of upgrades or replacement of the storage tank systems.	☐	☐	☐
☒	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☒	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☐	Storage tank fuel inventory, including tank water level.	☐	☐	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☒	SD DENR Inspection Records	☐	☒	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	3	1,000 gallon				
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Huron Tank & Culvert
Tank Installation Date:	Sept 1998
Tank Installer Name:	Dockendorf Equipment

Piping Manufacturer Name:	Ameron Fiberglass
Piping Installation Date:	Sept 1998
Piping Installer Name:	Dockendorf Equipment
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :O'Day Equipment Company	Phone Number: 605-338-5030
Name of Person(s) Performing Test: Clint Morgan	Tester Certification Number and Expiration Date: # SDO0101051106C Exp: 5-11-06
Manufacturer of Test Equipment / Model or Version: Petro Tite	
Equipment Threshold, GPH: 0.05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: May 29, 2004	

				Pressure Test														Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	47	1.5"/ 25'	1300	0	0	0	0									1330	P	1600	50	1700	P
2	48	1.5"/20'	1300	.001	.006	0	0									1330	P	1730	50	1830	P
3	48	1.5"/40'	1500	0	0	0	0									1530	P	1900	50	2000	P
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☒	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☒	Pea Rock				
☐	Other				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☐	Pressurized	☒	Single check valve
	Bedding Material	☒	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other (Sand)	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☒	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☐	Automatic Tank Gauging	☐	Fiber-optic Technologies	☒	Pressure Tests
☒	Manual Tank Gauging	☐	SPCC Plans	☒	Mechanical Line Leak Det.
☒	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: NA / / month/day/year
Estimated number of gallons discharged:

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☐	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods *(Please specify below which method of leak detection ***)*		
☐	Closure-in-Place	☐	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

Installation documentation consisted of the proposed installation plans. It appears the system was installed as proposed. The station manager provided photographs of some of the installation work.

Two DENR inspection reports were provided. One set of results of cathodic testing was also provided.

The system was a suction type. One line was observed to have two check valves installed. The manager stated that they had problems with that line holding suction and slow dispenser operation in the past and that was why a second check valve was installed. When the dispenser was removed a significant quantity of debris was found in the check valve screen. It is believed that this debris caused the problems.

The system was removed due to the Co-op building a new C-store approx. one mile away near the highway. Sales at the old station were not enough to justify keeping the system in operation.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Farmer's Union

Street Address: 100 Elk Street City: Elkton

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	1000	Diesel fuel	good
2	1000	Unleaded Gasoline	good
3	1000	Ethanol Gasoline	good

Piping

Was the piping removed at this site? Yes x No ____

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 1 Number of islands removed: 1

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No x If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No x If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 0 Loose cubic yards of fill used: 24

Imported backfill consisting of silty clay till was used to replace the tank volume.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin had been backfilled with quartzite chips, with sand sidewalls to approximately 8 feet. No visible contamination was observed, no petroleum odors were noted, and the PID did not detect organic vapors in any of the samples. Soil samples submitted for laboratory analysis were below laboratory detection limits. The only petroleum detection at this site was a trace TPH as gasoline concentration of 3. ppm in the sample collected at the pump island. No water or sewer service lines exist near the former tank basin.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Terry Florentz Signature: _____ Date: _____

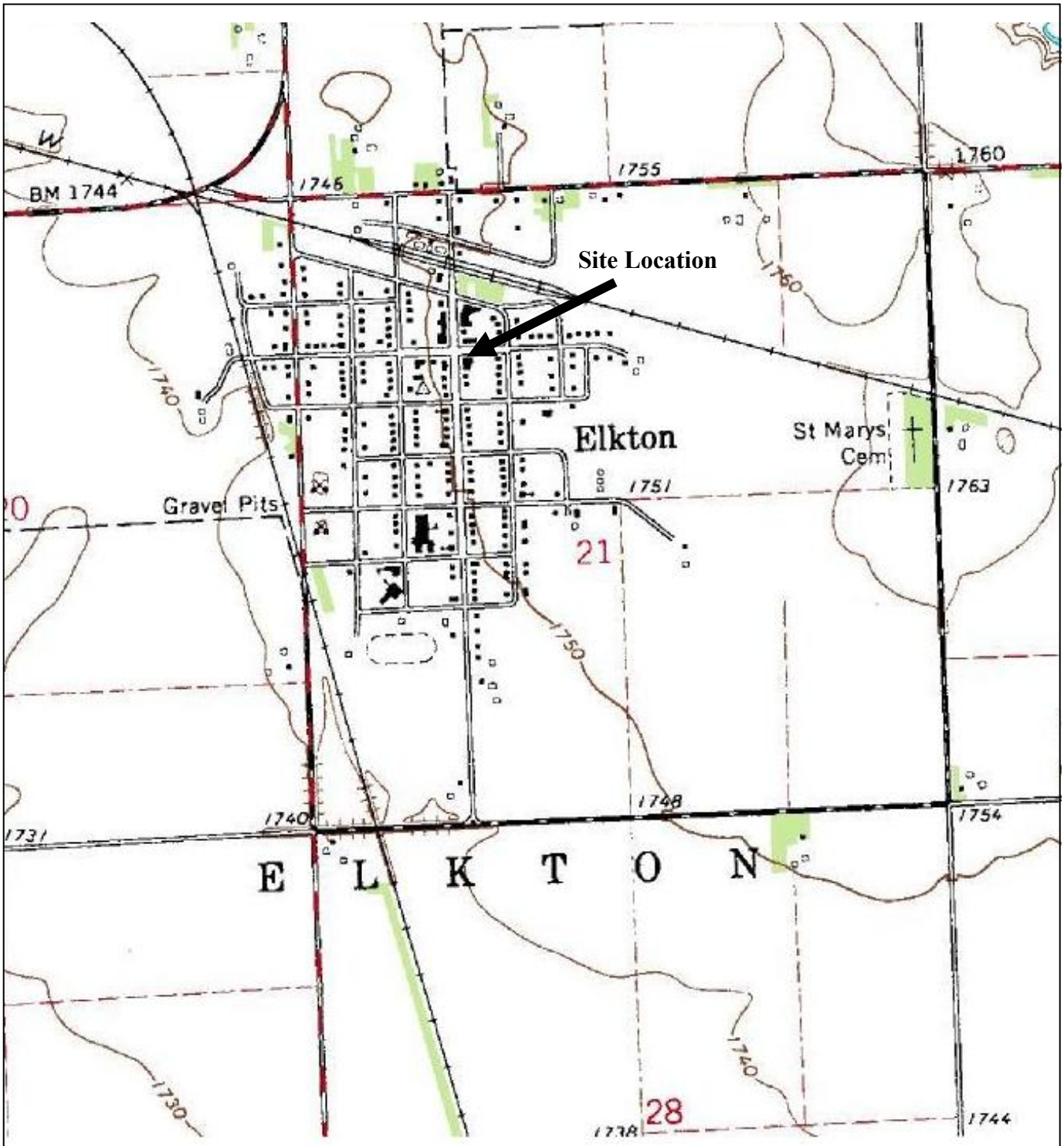
Table 1
PID Readings for Selected Soil Samples
Farmer's Union Station
Elkton, South Dakota

Sample ID	Location	Depth (ft)	PID
#1	Island Sample	2	0.0
#2	Below Diesel Tank	9	0.0
#3	Below Unleaded Gasoline Tank	9	0.0
#4	Below Ethanol Gasoline Tank	9	0.0

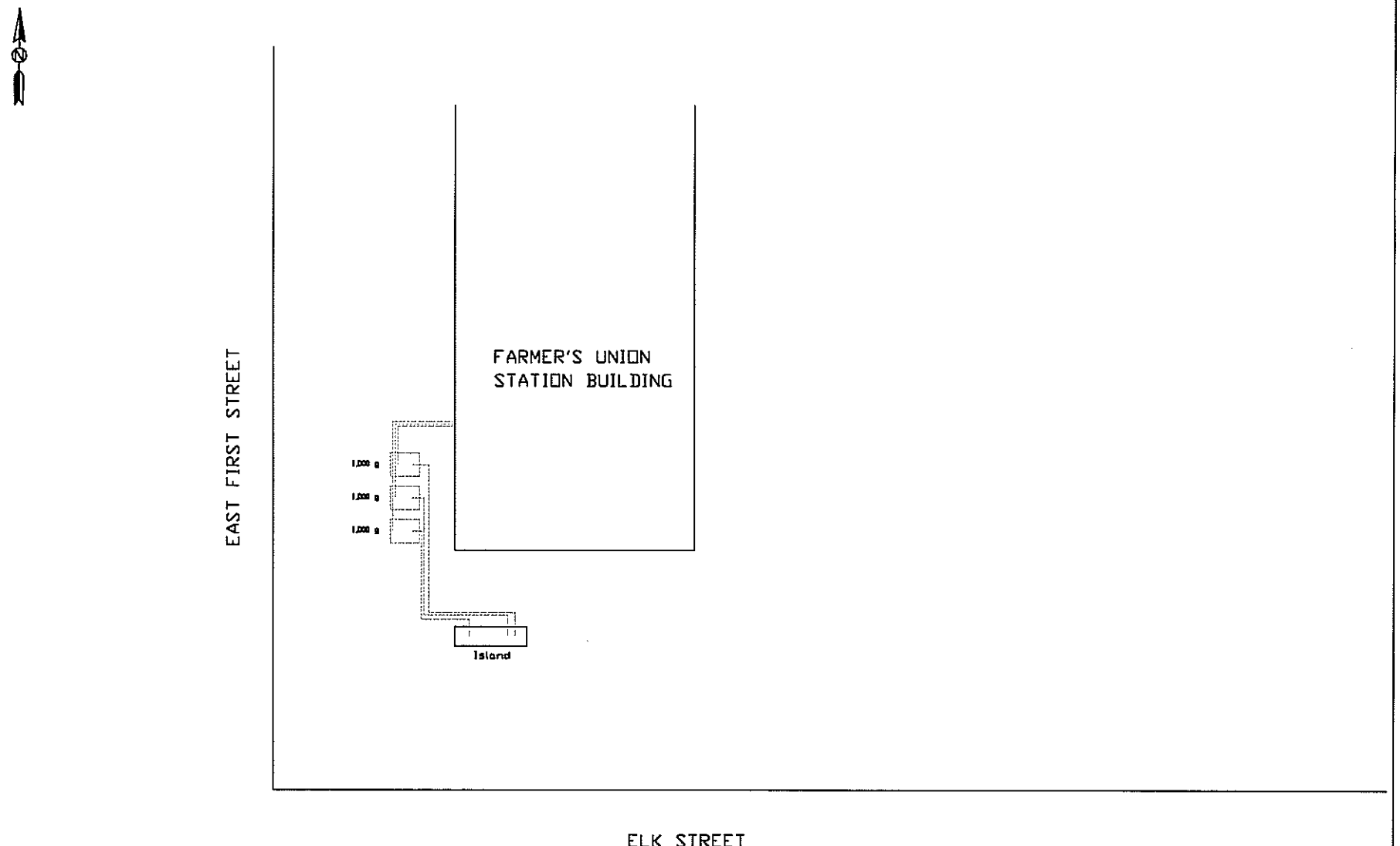
Table 2
Analytical Results for Soil Samples
Farmer's Union Station
Elkton, South Dakota

Sample ID	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Fuel Oil	Naphthalene
#1) Elkton-Island-2'	< 0.2	< 0.2	< 0.2	< 0.2	3.0	< 0.2		< 0.2
#2) Elkton-Diesel#1-9'							< 10.0	< 0.7
#3) Elkton-Gasoline#2-9'	< 0.2	< 0.2	< 0.2	< 0.2	< 1.0	< 0.2		< 0.2
#4) Elkton-Ethanol#3-9'	< 0.2	< 0.2	< 0.2	< 0.2	< 1.0	< 0.2		< 0.2
Tier 1 Action Levels	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**--**	**500.0**	**25.0**

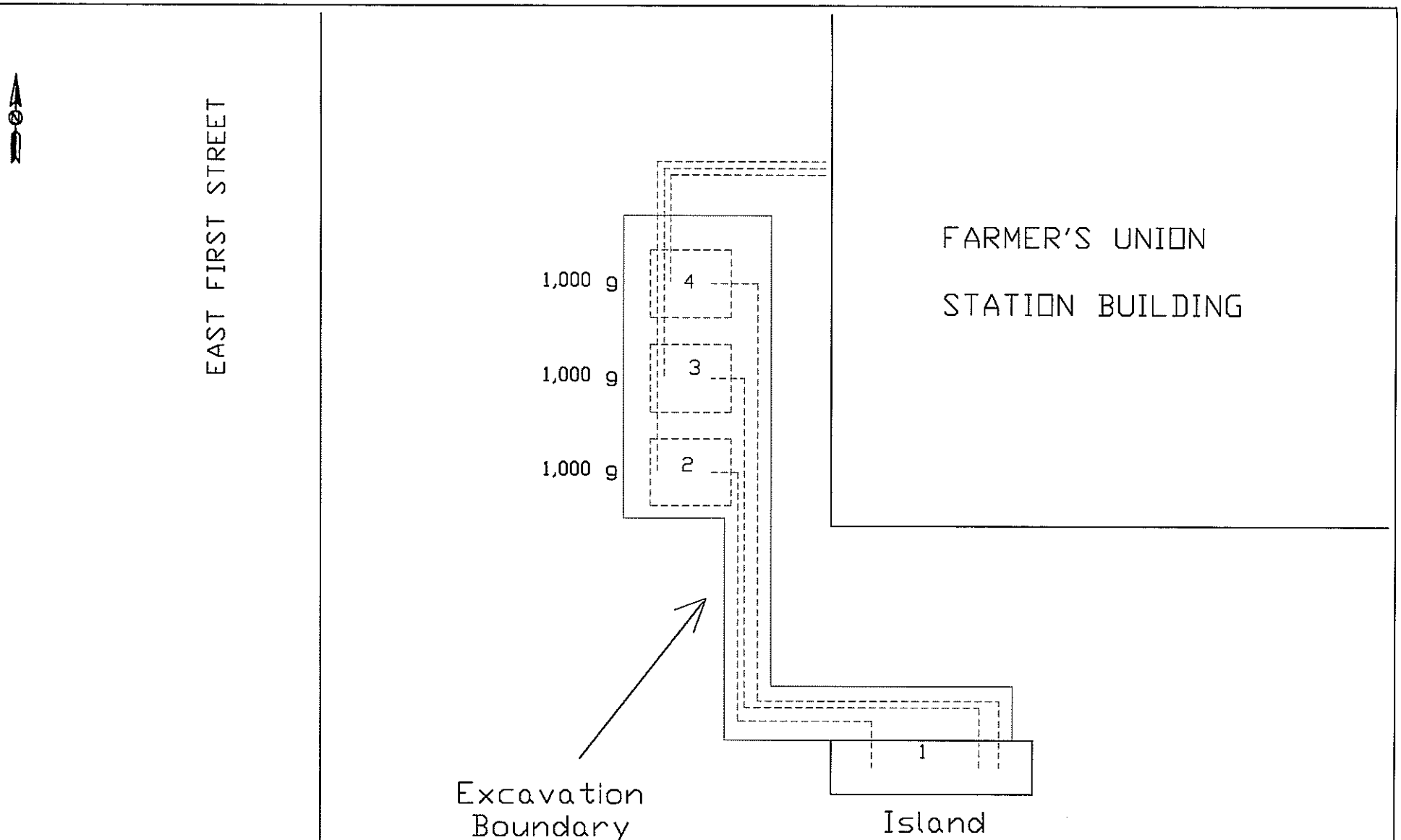
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #4	Figure 1	
Topographic Site Location Map Farmer's Union Oil 100 Elk Street Elkton, SD		**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



PSS# 04	FIGURE 2	Scale: 1"=30'
Farmer's Union 100 Elk Street Elkton, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 04	FIGURE 3	Scale: 1"=10'
Elkton Farmer's Union 100 Elk Street Elkton, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04060232-005
Client Sample ID: Elkton-Island-2'

Report Date: 07/12/04
Collection Date: 06/11/04 13:30
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:49/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:49/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:49/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:49/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:49/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:49/SN
Surr: Trifluorotoluene	95.8	%REC			70-130		SW8021B	06/19/04 21:49/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	3	mg/kg	J	10		1	CA-LUFT	06/19/04 21:47/SN
Surr: Trifluorotoluene	99.2	%REC			60-150		CA-LUFT	06/19/04 21:47/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04060232-006
Client Sample ID: Elkton-Diesel #1-9'

Report Date: 07/12/04
Collection Date: 06/11/04 14:15
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10		1	CA-LUFT	06/29/04 18:13/SN
Naphthalene	ND	mg/kg		0.66		1	CA-LUFT	06/29/04 18:13/SN
Surr: o-Terphenyl	81.6	%REC			70-130		CA-LUFT	06/29/04 18:13/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04060232-007
Client Sample ID: Elkton-Gasoline #2-9'

Report Date: 07/12/04
Collection Date: 06/11/04 14:55
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:21/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:21/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:21/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:21/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:21/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:21/SN
Surr: Trifluorotoluene	95.2	%REC			70-130		SW8021B	06/19/04 22:21/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/19/04 22:20/SN
Surr: Trifluorotoluene	98.8	%REC			60-150		CA-LUFT	06/19/04 22:20/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04060232-008
Client Sample ID: Elkton-Ethanol #3-9'

Report Date: 07/12/04
Collection Date: 06/11/04 15:15
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:54/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:54/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:54/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:54/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:54/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/19/04 22:54/SN
Surr: Trifluorotoluene	95.0	%REC			70-130		SW8021B	06/19/04 22:54/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/19/04 22:52/SN
Surr: Trifluorotoluene	98.5	%REC			60-150		CA-LUFT	06/19/04 22:52/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: ~~[illegible]~~ Tank Pathology	
Report Mail Address: 523 East Capitol Pierre SD	Contact Name, Phone, Fax, E-mail: Terry 773 3296	Sampler Name if other than Contact:
Invoice Address: same	Invoice Contact & Phone #: same	Purchase Order #:

RECEIVED JUL 2004 DENR

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Receipt Temp 8.2 °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	BTEX	TPH as Gasoline	TPH as Diesel	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments	LABORATORY USE ONLY Lab ID
1	LAVIN-10K East-13'	6/10/04	1:10p	1 S	X	X			/			~~R40~~ 0460232-001
2	LAVIN-10K West-12'	6/10/04	1:00p	1 S	X	X			/			002
3	LAVIN-NW-12'	6/10/04	3:00p	1 S	X	X			/			003
4	LAVIN-NE-12'	6/10/04	2:50p	1 S	X	X			/			004
5	Elkton-Island-2'	6/11/04	~~1:30~~ p	1 S	X	X			/		1:30p Time	005
6	Elkton-Diesel#1-9'	6/11/04	2:15p	1 S			X		/			006
7	Elkton-Gasoline#2-9'	6/11/04	2:55	1 S	X	X			/			007
8	Elkton-Effluent#3-9'	6/11/04	3:15p	1 S	X	X			/			008
9									/			
10									/			

Custody Record MUST be Signed

Relinquished by: [signature] Date/Time: Shipped by: Received by: [signature] Date/Time: 6-15-04 15:00

Relinquished by: Date/Time: Shipped by: Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: X

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	5	Contact :	Tom Bozied
Site Name:	Bozied Texaco	Address :	916 6th Street
Address:	1441 6th Street	City :	Brookings
City :	Brookings	Phone :	605-691-3010
County :	Brookings		

Legal Description of Property: East 9.13' lot 3, lots 4-5-6-7-8, Block one Hillcrest addition, City of Brookings.

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☒	☐	☐
☒	Dates of upgrades or replacement of the storage tank systems.	☐	☒	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☐	Storage tank fuel inventory, including tank water level.	☐	☐	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☒	SD DENR Inspection Records	☐	☒	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	2	8,000 gallon	1	10,000 gallon		
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Unknown
Tank Installation Date:	1969
Tank Installer Name:	Unknown

Piping Manufacturer Name:	Unknown
Piping Installation Date:	Unknown
Piping Installer Name:	Unknown

Notes

Based on the original plans, the piping was galvanized steel. The lines were replaced with wrapped steel lines to comply with the 1998 upgrade requirements on an unknown date. The station was constructed in 1969 as a Champlin station

LINE TIGHTNESS TEST REPORT FORM

Testing Company :O'Day Equipment	Phone Number: 605-338-5030
Name of Person(s) Performing Test: Clint Morgan	Tester Certification Number and Expiration Date: EXP 5-11-06
Manufacturer of Test Equipment / Model or Version: Petro Tite	
Equipment Threshold, GPH: .05 gph	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: 5-1-04	

Pressure Test																		Helium Test			
				Line Test Results																	
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	48	1.5"120'	1245	.001	.004	.001	.004	0	0	0	0					1330	P	1500	50	1600	P
2	48	1.5"120'	1410	.014	.06	.011	.044	.01	.04	.012	.048	.011	.044	.011	.044	1435	F	1630	50	1730	F
3																					
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☒	Internal Lining	☐	Unknown
☒	Unprotected Steel	☒	Single Wall		
☐	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☐	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☒	Flow Shut-Off
☐	Unknown	☐	Compartmented	☒	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other (Mix of sand, gravel, pea rock)				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☐	Dispenser Sump(s)
☐	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☒	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☒	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other (sand, pea rock)	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☒	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 06 / 15 / 04 month/day/year
Estimated number of gallons discharged: Unknown

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☒	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☒	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☒	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☒ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes? Ethanol line failed both precision and helium tests. Upon removal, however, no visble contamination or leaks were observed.

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☒	Fill Pipe
☒	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:

Explanation:

Contamination believed to be from historical spills/overfills possibly before tank system was upgraded.

Cause of the Discharge

☐	Loose Component	☒	Spill	☐	Improper Installation
☐	Corrosion	☒	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☒	Unknown
				☐	Other

Explanation:

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☒	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

The product lines that were installed to comply with the 1998 upgrades were steel with a wrapping (vinyl?) covering them. When the wrapping was removed, the steel pipe inside appeared to be in "like new" condition. When the upgrade was done, the tanks were lined internally and cathodic protection was added. Buried "coke fines" were used as the cathode. Upon removal, all of the spill buckets were found to be in non-functioning condition. Valves were plugged and the buckets contained a mix of water and debris.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Bozied Car Care

Street Address: 1441 6TH Street City: Brookings

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	8000	Gasoline	good
2	8000	Gasoline	good
3	10,000	Gasoline	good

Piping

Was the piping removed at this site? Yes x No ____

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 1 Number of islands removed: 1

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No x If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No x If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 52 Loose cubic yards of fill used: 210

Imported backfill consisting of silty clay till was used to replace the tank volume.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin had been backfilled with sand, with clay till sidewalls to approximately 13 feet. Visible contamination was observed in the tank backfill, with three loads of contaminated soil removed from below the tanks. An additional load of contaminated soil was removed from below the east dispenser on the island. Soil samples submitted for laboratory analysis exceeded Tier 1 Action Levels at one location in the tank basin, and at the east end of the island. As Tier 1 Action Levels were exceeded, additional assessment will be necessary.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Terry Florentz Signature: _____ Date: _____

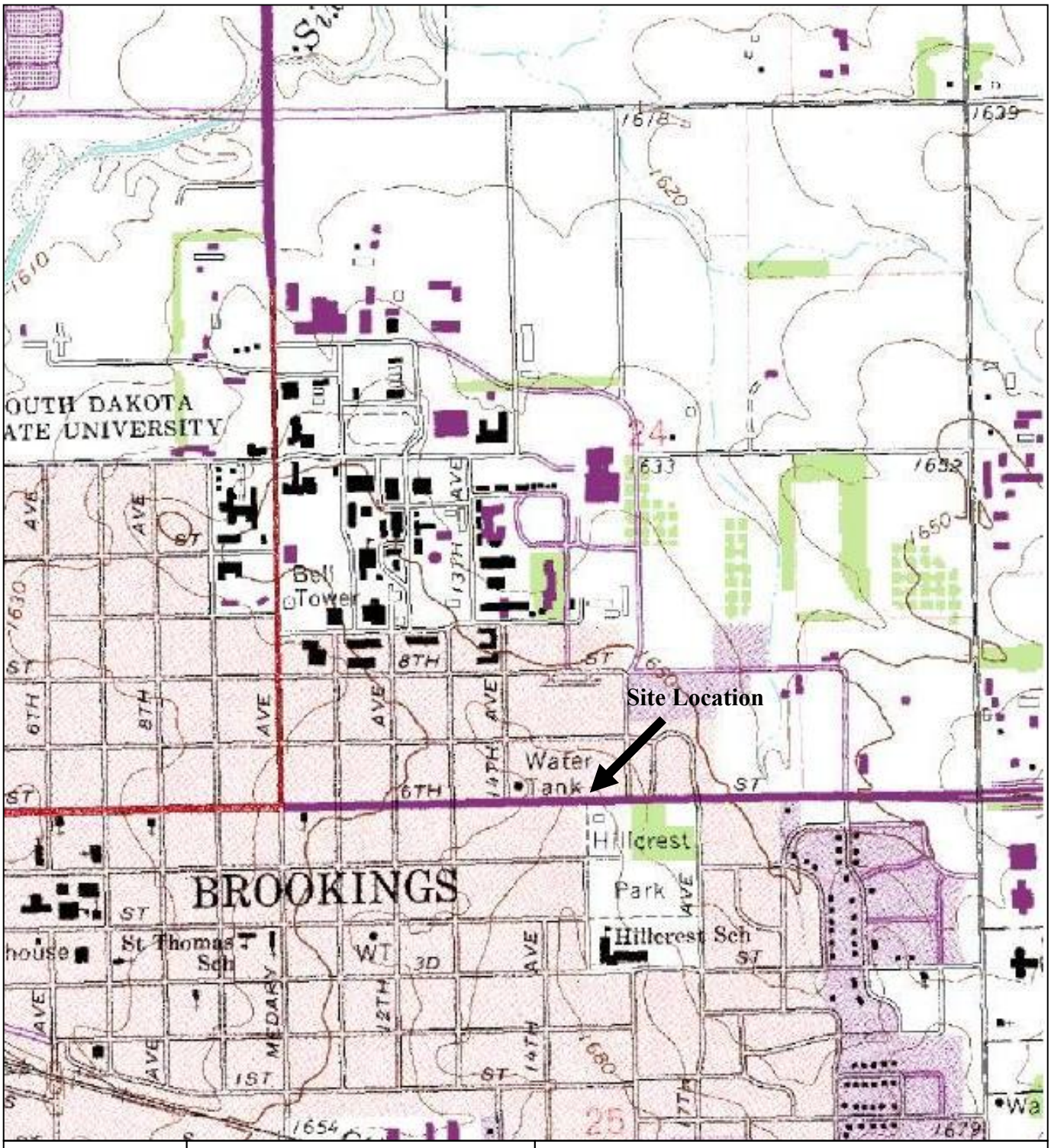
Table 1
PID Readings for Selected Soil Samples
Bozied Car Care
Brookings, South Dakota

Sample ID	Location	Depth (ft)	PID
#1	NE Tank Basin	13	3.0
#2	SE Tank Basin	13	82.0
#3	NW Tank Basin	13	300.0
#4	SW Tank Basin	13	625.0
#5	South Middle Tank Basin	3	290.
#6	Piping East	3	0.8
#7	Piping Middle	3	0.8
#8	Piping West	3	0.4
#9	Middle Island	2	0.0
#10	West Island	2	23.5
#11	East Island	2	600.0
#12	Island Piping West	3	0.0
#13	East Island	5	1000+

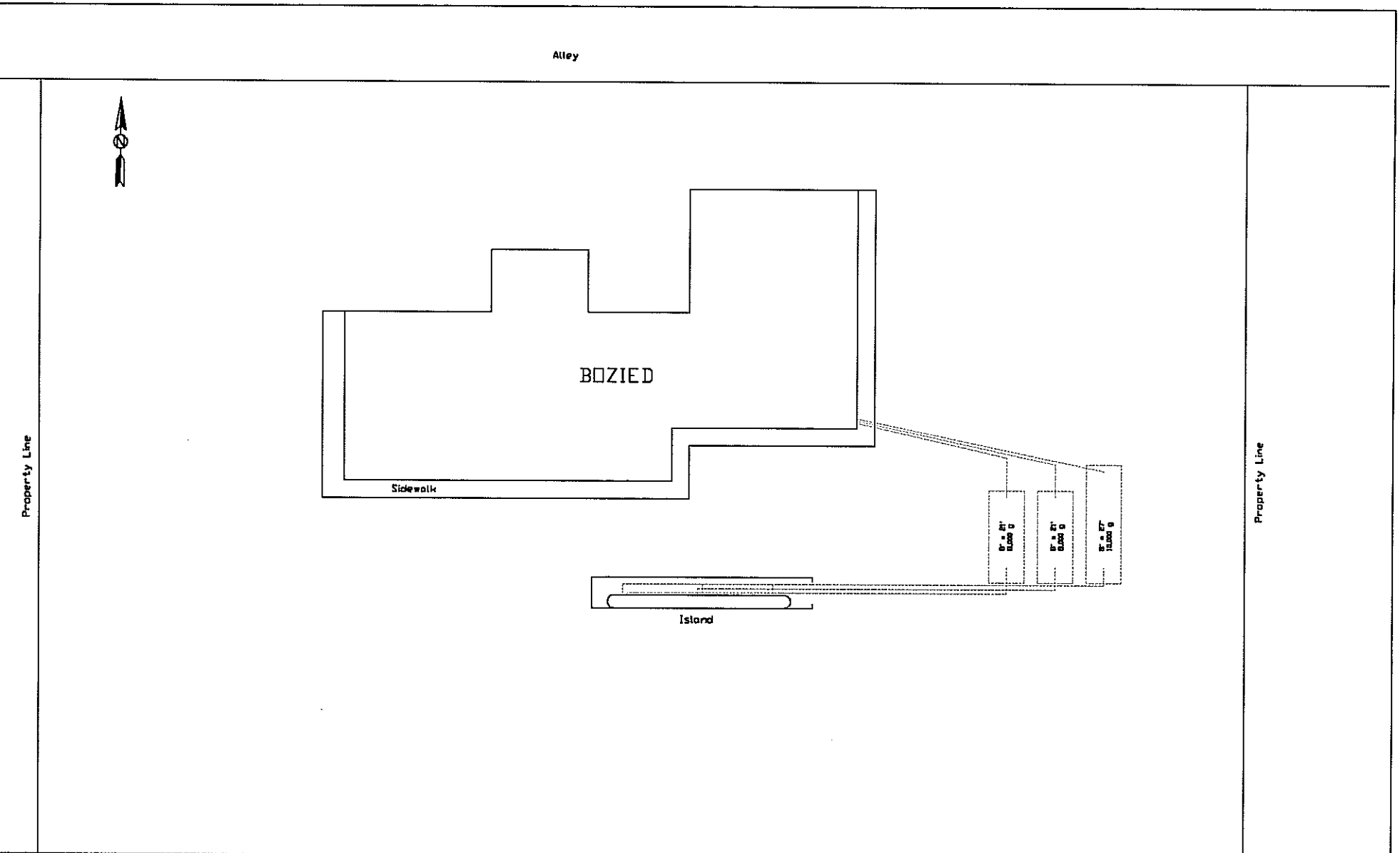
Table 2
Analytical Results for Soil Samples
Bozied Car Care
Brookings, South Dakota

Sample ID	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Fuel Oil	Naphthalene
#1) Bozied-10K North-13'	0.05	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#2) Bozied-10K South-13'	**0.32**	3.0	3.8	8.1	200.	0.36		0.45
#3) Bozied-NW-13'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#4) Bozied-SW-13'	< 0.2	0.35	0.15	0.64	11.	< 0.2		< 0.2
#7) Bozied-Piping Middle-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#10) Bozied-Island West-2'	< 0.2	< 0.2	< 0.2	< 0.2	6.	< 0.2		0.15
#11) Bozied-Island East-2'	< 2.0	**16.0**	7.9	133.	**2000.**	< 2.0		10.0
#12) Bozied-Midwest-3'	< 0.2	< 0.2	< 0.2	< 0.2	2.	< 0.2		0.05
#13) Bozied-Island East-5'	**0.27**	**27.**	**27.**	160.	**1900.**	< 1.0		9.4
Tier 1 Action Levels	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	--	**500.0**	**25.0**

Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)

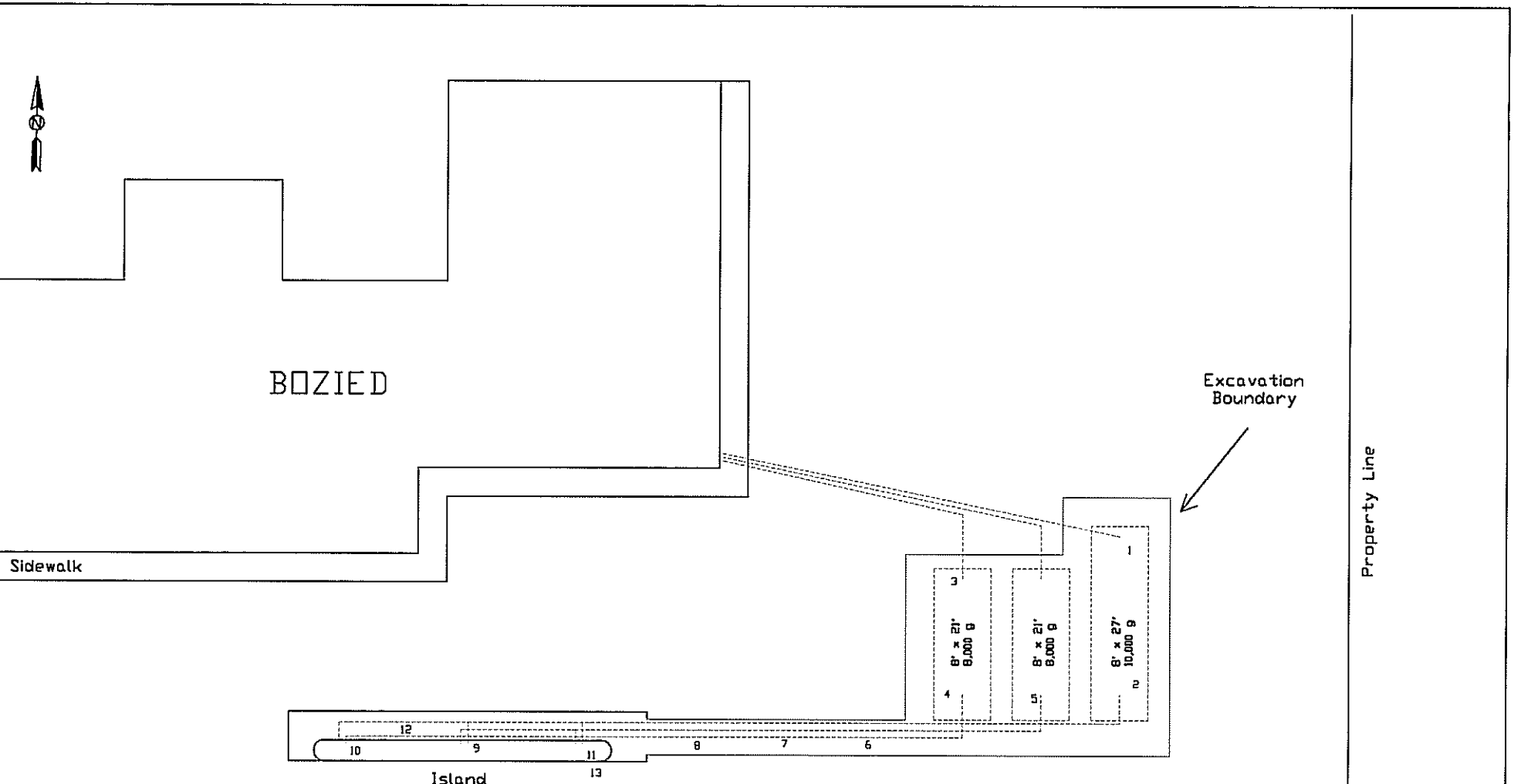


TPSS #5	Figure 1	
Topographic Site Location Map Bozied Texaco 1441 6th Street Brookings, SD		**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



PSS# 05	FIGURE 2	Scale: 1"=30'
Bozied Texaco 1441 6TH Street Brookings, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

6TH STREET



PSS# 05	FIGURE 3	Scale: 1"=20'
Bozied Texaco 1441 6TH Street Brookings, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-001
Client Sample ID: Bozied-10K North-13'

Report Date: 07/08/04
Collection Date: 06/14/04 18:30
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/28/04 19:51/SN
Benzene	0.05	mg/kg	J	0.20		1	SW8021B	06/28/04 19:51/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/28/04 19:51/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 19:51/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/28/04 19:51/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/28/04 19:51/SN
Surr: Trifluorotoluene	90.0	%REC			70-130		SW8021B	06/28/04 19:51/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/28/04 19:49/SN
Surr: Trifluorotoluene	96.7	%REC			60-150		CA-LUFT	06/28/04 19:49/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-002
Client Sample ID: Bozied-10K South

Report Date: 07/08/04
Collection Date: 06/14/04 18:35
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	0.36	mg/kg	J	1.0		5	SW8021B	06/28/04 23:07/SN
Benzene	0.32	mg/kg	J	1.0		5	SW8021B	06/28/04 23:07/SN
Toluene	3.0	mg/kg		1.0		5	SW8021B	06/28/04 23:07/SN
Ethylbenzene	3.8	mg/kg		1.0		5	SW8021B	06/28/04 23:07/SN
Xylenes, Total	8.1	mg/kg		1.0		5	SW8021B	06/28/04 23:07/SN
Naphthalene	0.45	mg/kg	J	1.0		5	SW8021B	06/28/04 23:07/SN
Surr: Trifluorotoluene	0	%REC	D		70-130		SW8021B	06/28/04 23:07/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	200	mg/kg		50		5	CA-LUFT	06/28/04 23:05/SN
Surr: Trifluorotoluene	0	%REC	D		60-150		CA-LUFT	06/28/04 23:05/SN

- D=Sample's dilution caused surrogate recovery to be outside QC advisory limits.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-003
Client Sample ID: Bozied-NW-13'

Report Date: 07/08/04
Collection Date: 06/15/04 10:45
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/28/04 22:01/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 22:01/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/28/04 22:01/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 22:01/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/28/04 22:01/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/28/04 22:01/SN
Surr: Trifluorotoluene	91.7	%REC			70-130		SW8021B	06/28/04 22:01/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/28/04 21:59/SN
Surr: Trifluorotoluene	96.7	%REC			60-150		CA-LUFT	06/28/04 21:59/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-004
Client Sample ID: Bozied-SW-13'

Report Date: 07/08/04
Collection Date: 06/15/04 10:55
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/28/04 20:56/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 20:56/SN
Toluene	0.35	mg/kg		0.20		1	SW8021B	06/28/04 20:56/SN
Ethylbenzene	0.15	mg/kg	J	0.20		1	SW8021B	06/28/04 20:56/SN
Xylenes, Total	0.64	mg/kg		0.20		1	SW8021B	06/28/04 20:56/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/28/04 20:56/SN
Surr: Trifluorotoluene	87.5	%REC			70-130		SW8021B	06/28/04 20:56/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	11	mg/kg		10		1	CA-LUFT	06/28/04 20:54/SN
Surr: Trifluorotoluene	93.3	%REC			60-150		CA-LUFT	06/28/04 20:54/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-005
Client Sample ID: Bozied-Piping Middle-3'

Report Date: 07/08/04
Collection Date: 06/14/04 15:00
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/28/04 17:40/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 17:40/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/28/04 17:40/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 17:40/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/28/04 17:40/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/28/04 17:40/SN
Surr: Trifluorotoluene	82.3	%REC			70-130		SW8021B	06/28/04 17:40/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/28/04 17:38/SN
Surr: Trifluorotoluene	86.7	%REC			60-150		CA-LUFT	06/28/04 17:38/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-006
Client Sample ID: Bozied-Island West-2'

Report Date: 07/08/04
Collection Date: 06/14/04 15:35
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:13/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:13/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:13/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:13/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:13/SN
Naphthalene	0.15	mg/kg	J	0.20		1	SW8021B	06/28/04 18:13/SN
Surr: Trifluorotoluene	86.7	%REC			70-130		SW8021B	06/28/04 18:13/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	6	mg/kg	J	10		1	CA-LUFT	06/28/04 18:11/SN
Surr: Trifluorotoluene	92.5	%REC			60-150		CA-LUFT	06/28/04 18:11/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-007
Client Sample ID: Bozied-Island East-2'

Report Date: 07/08/04
Collection Date: 06/14/04 15:55
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		2.0		10	SW8021B	06/29/04 01:50/SN
Benzene	ND	mg/kg		2.0		10	SW8021B	06/29/04 01:50/SN
Toluene	16	mg/kg		2.0		10	SW8021B	06/29/04 01:50/SN
Ethylbenzene	7.9	mg/kg		2.0		10	SW8021B	06/29/04 01:50/SN
Xylenes, Total	133	mg/kg		2.0		10	SW8021B	06/29/04 01:50/SN
Naphthalene	10	mg/kg		2.0		10	SW8021B	06/29/04 01:50/SN
Surr: Trifluorotoluene	0	%REC	D		70-130		SW8021B	06/29/04 01:50/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	2000	mg/kg		100		10	CA-LUFT	06/29/04 01:48/SN
Surr: Trifluorotoluene	0	%REC	D		60-150		CA-LUFT	06/29/04 01:48/SN

- D=Sample's dilution caused surrogate recovery to be outside QC advisory limits.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-008
Client Sample ID: Bozied-Midwest-3'

Report Date: 07/08/04
Collection Date: 06/14/04 19:15
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:45/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:45/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:45/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:45/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/28/04 18:45/SN
Naphthalene	0.05	mg/kg	J	0.20		1	SW8021B	06/28/04 18:45/SN
Surr: Trifluorotoluene	89.2	%REC			70-130		SW8021B	06/28/04 18:45/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	2	mg/kg	J	10		1	CA-LUFT	06/28/04 18:43/SN
Surr: Trifluorotoluene	94.2	%REC			60-150		CA-LUFT	06/28/04 18:43/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Bozied
Lab ID: R04060321-009
Client Sample ID: Bozied-East Island-5'

Report Date: 07/08/04
Collection Date: 06/15/04 11:10
Date Received: 06/22/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		1.0		5	SW8021B	06/29/04 00:12/SN
Benzene	0.27	mg/kg	J	1.0		5	SW8021B	06/29/04 00:12/SN
Toluene	27	mg/kg		1.0		5	SW8021B	06/29/04 00:12/SN
Ethylbenzene	27	mg/kg		1.0		5	SW8021B	06/29/04 00:12/SN
Xylenes, Total	160	mg/kg		1.0		5	SW8021B	06/29/04 00:12/SN
Naphthalene	9.4	mg/kg		1.0		5	SW8021B	06/29/04 00:12/SN
Surr: Trifluorotoluene	0	%REC	D		70-130		SW8021B	06/29/04 00:12/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	1900	mg/kg		50		5	CA-LUFT	06/29/04 00:10/SN
Surr: Trifluorotoluene	0	%REC	D		60-150		CA-LUFT	06/29/04 00:10/SN

- D=Sample's dilution caused surrogate recovery to be outside QC advisory limits.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

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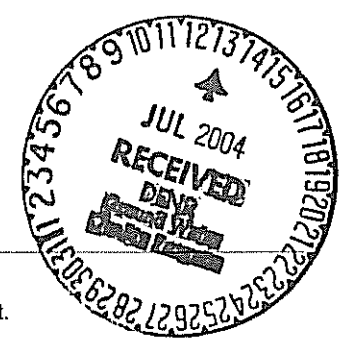
QA/QC Summary Report

Client: SD DENR
Project: Tank Pathology Bozied

Report Date: 07/08/04
Work Order: R04060321

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2328
Sample ID: MB-2328	Method Blank								06/29/04 15:51
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	100	60	150			
Sample ID: LCSG-2328	Laboratory Control Sample - generic								06/29/04 16:56
TPH as Gasoline	210	mg/kg	10	104	60	140			
Surr: Trifluorotoluene			0.40	126	50	200			
Sample ID: R04060321-005AMS	Sample Matrix Spike								06/30/04 00:01
TPH as Gasoline	180	mg/kg	10	91	60	140			
Surr: Trifluorotoluene			0.40	111	60	150			
Sample ID: R04060321-005AMSD	Sample Matrix Spike Duplicate								06/30/04 00:33
TPH as Gasoline	180	mg/kg	10	90	60	140	1.1	20	
Surr: Trifluorotoluene			0.40	107	60	150			
Method: CA-LUFT									Analytical Run: GCPID1-R_040628A
Sample ID: CCV_0628hp402r-S	Continuing Calibration Verification Standard								06/28/04 14:05
TPH as Gasoline	20	mg/kg	10	100	75	125			
Surr: Trifluorotoluene			0.40	106	50	150			
Method: SW8021B									Batch: 2328
Sample ID: MB-2328	Method Blank								06/29/04 15:53
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	97	70	130			
Sample ID: LCSB-2328	Laboratory Control Sample - generic								06/29/04 17:53
Methyl tert-butyl ether (MTBE)	8.1	mg/kg	0.20	81.2	60	130			
Benzene	8.2	mg/kg	0.20	82.3	60	130			
Toluene	8.6	mg/kg	0.20	86.3	60	130			
Ethylbenzene	8.4	mg/kg	0.20	84.5	60	130			
Naphthalene	6.5	mg/kg	0.20	65	60	130			
Xylenes, Total	26	mg/kg	0.20	85.2	60	130			
Surr: Trifluorotoluene			0.20	98.3	60	130			



Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: Tank Pathology Bozied

Report Date: 07/08/04
Work Order: R04060321

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: GCPID1-R_040628A	
Sample ID: CCV_0628hp404r-S	Continuing Calibration Verification Standard							06/28/04 15:12	
m+p-Xylenes	18	mg/kg	0.20	90	85	115			
o-Xylene	9.8	mg/kg	0.20	98.1	85	115			
Methyl tert-butyl ether (MTBE)	9.4	mg/kg	0.20	93.8	85	115			
Benzene	9.7	mg/kg	0.20	97.2	85	115			
Toluene	9.8	mg/kg	0.20	97.6	85	115			
Ethylbenzene	9.5	mg/kg	0.20	95.4	85	115			
Naphthalene	8.0	mg/kg	0.20	79.6	85	115			S
Surr: Trifluorotoluene			0.20	48.2	85	115			S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: TANK PATHOLOGY BURIED
Report Mail Address: 523 East Capitol Pierre SD	Contact Name, Phone, Fax, E-mail: Terry 773 3296
Invoice Address: same	Invoice Contact & Phone #:
	Purchase Order #:
	ELI Quote #:
	Sampler Name if other than Contact:

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Number of Containers
Sample Type: A Air W Water S Soils/Solids V Vegetation B Biosassy O Other
MATRIX

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	BTEX + TPH as Gas								SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	LABORATORY USE ONLY
1 Bozied - 10K North - 13'	6/14/04	6:30		X											B04060321-001
2 Bozied - 10K South - 13'	6/14/04	6:35p		X											002
3 Bozied - NW - 13'	6/15/04	10:45a		X											003
4 Bozied - SW - 13'	6/15/04	10:55		X											004
5															~~005~~
6 Bozied - Piping Middle - 3'	6/14/04	3:00p		X											005
7 Bozied - Island West - 2'	6/14/04	3:35p		X											006
8 Bozied - Island East - 2'	6/14/04	3:55p		X											007
9 Bozied - Mid west - 3'	6/14/04	7:15p		X											008
10 Bozied - East Island - 5'	6/15/04	11:10a		X											009

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

JUL 2004 RECEIVED DENR

Receipt Temp 12.9 °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

Custody Record MUST be Signed

Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 6-22-04 14:50
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: ____

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	6	Contact :	Steve Stone
Site Name:	Wayne's Amoco	Address :	3800 9th Avenue SE
Address:	604 3rd Avenue South	City :	Watertown
City :	Clear Lake	Phone :	605-882-1484
County :	Deuel		

Legal Description of Property: 11 & 12 Block 4 McCraney's addition, City of Clear Lake

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☒	☐	☐
☐	Dates of upgrades or replacement of the storage tank systems.	☐	☐	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☐	Storage tank fuel inventory, including tank water level.	☐	☐	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	2	3,000 gallon	1	10,000 gallon		
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Huron Tank & Culvert
Tank Installation Date:	1993
Tank Installer Name:	Sioux Equipment

Piping Manufacturer Name:	Ameron Fiberglass
Piping Installation Date:	1993
Piping Installer Name:	Sioux Equipment
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company: O' Day Equipment	Phone Number: 605-338-5030
Name of Person(s) Performing Test: Clint Morgan	Tester Certification Number and Expiration Date: Exp 5-11-06
Manufacturer of Test Equipment / Model or Version: Petro Tite	
Equipment Threshold, GPH: .05 gph	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
5-28-04	

Pressure Test																		Helium Test			
				Line Test Results																	
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	48	1.5"50'	945	0	0	0	0									1000	P	1200	50	1300	P
2	48	1.5"50'	945	.001	.004	.001	.004	0	0	0	0					1030	P	1330	50	1430	P
3	48	1.5"50'	945	.001	.004	0	0	0	0	.001	.004	0	0	0	0	1130	P	1500	50	1600	P
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☒	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☒	Pea Rock				
☒	Other (sand & gravel)				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☒	Pea Rock	☐	Bulk Product		
☐	Other	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge:	/ / month/day/year
Estimated number of gallons discharged:	

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☐	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods *(Please specify below which method of leak detection ***)*		
☐	Closure-in-Place	☐	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

The tank system was found to be installed in accordance with the submitted plans. No information regarding testing etc. Was available. The station had ceased operation several months previously and the records were not retained.

An unusual configuration of piping near the island was noted. The installer present did not know of any reason for this method of pipe layout. It appears an abundance of pipe was used for no good reason.

Two additional tanks were discovered on site during the system removal, and they were subsequently removed under the abandoned tank removal program.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Lavin Oil Station (aka Wayne's Amoco)

Street Address: 604 3RD Avenue South City: Clear Lake

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	10,000	Ethanol Gasoline	good
2	3,000	Unleaded Gasoline	good
3	3,000	Unleaded Gasoline	good

Piping

Was the piping removed at this site? Yes x No ____

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 1 Number of islands removed: 1

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes ____ No x If yes, at what depth? ____

Was free product encountered in the excavation? Yes ____ No x If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 0 Loose cubic yards of fill used: 100

Imported backfill consisting of silty clay till was used to replace the tank volume.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin had been backfilled with sand and pea rock, with clay till sidewalls to approximately 13 feet. Visible staining of the tank backfill was observed, likely due to sub-surface movement of contaminants released prior to installation of the existing tank system. No contamination of the piping trench was observed. All tanks at this site were in excellent condition. Soil samples from the tank basin were submitted for laboratory analysis. The analyses indicated that while petroleum hydrocarbons were present in 3 of the 4 samples, no concentrations exceeded Tier I Action levels for petroleum hydrocarbons in soil. As the petroleum contamination encountered in the excavation appeared to be associated with the previous release at this site, additional assessment and cleanup does not appear to be warranted.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Terry Florentz Signature: ____ Date: ____

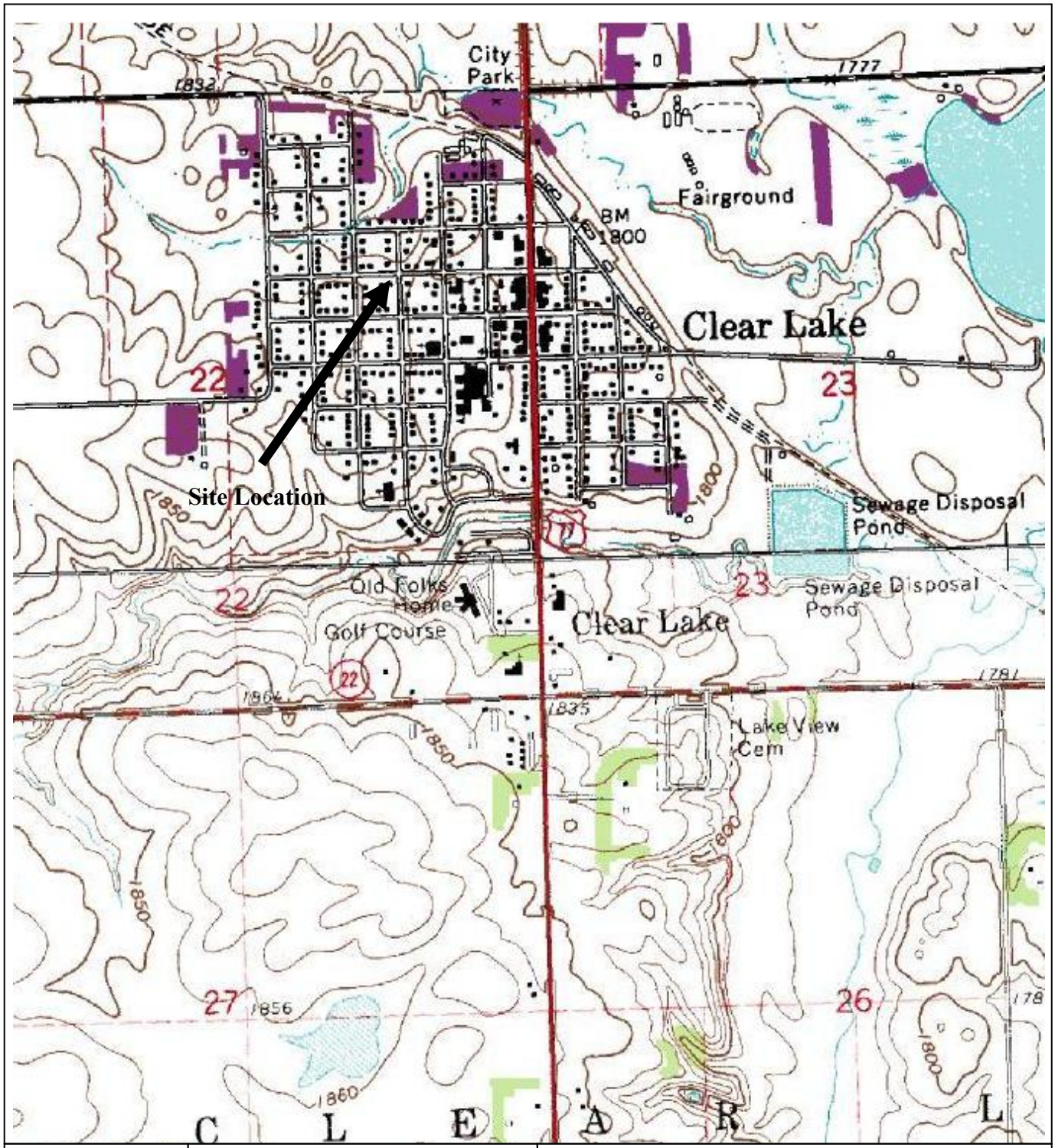
Table 1
PID Readings for Selected Soil Samples
Lavin Oil (aka Wayne's Amoco)
Clear Lake, South Dakota

Sample ID	Location	Depth (ft)	PID
#1	SE 10K Basin	13	110.
#2	SW 10K Basin	12	241.
#3	NW Tank Basin	12	70.
#4	NE Tank Basin	12	22.
#5	Piping	2	0.0
#6	North Island	2	0.0
#7	South Island	2	0.0

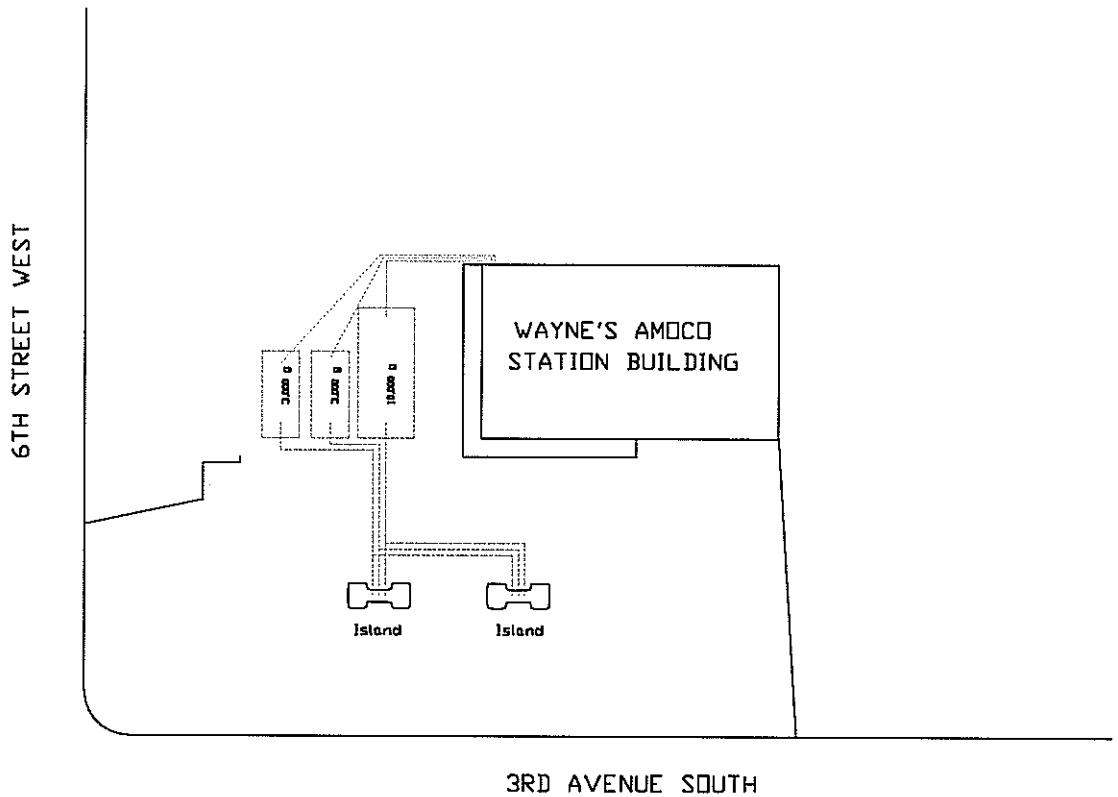
Table 2
Analytical Results for Soil Samples
Lavin Oil (aka Wayne's Amoco)
Clear Lake, South Dakota

Sample ID	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Fuel Oil	Naphthalene
#1) Lavin -10K East-13'	< 0.2	< 0.2	0.54	0.26	180.	< 0.2		< 0.2
#2) Lavin -10K West-12'	< 0.2	< 0.2	< 0.2	< 0.2	8.	< 0.2		< 0.2
#3) Lavin -NW-12'	< 0.2	< 0.2	< 0.2	< 0.2	3.	< 0.2		< 0.2
#4) Lavin -NE-12'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.0	< 0.2		< 0.2
Tier 1 Action Levels	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**--**	**500.0**	**25.0**

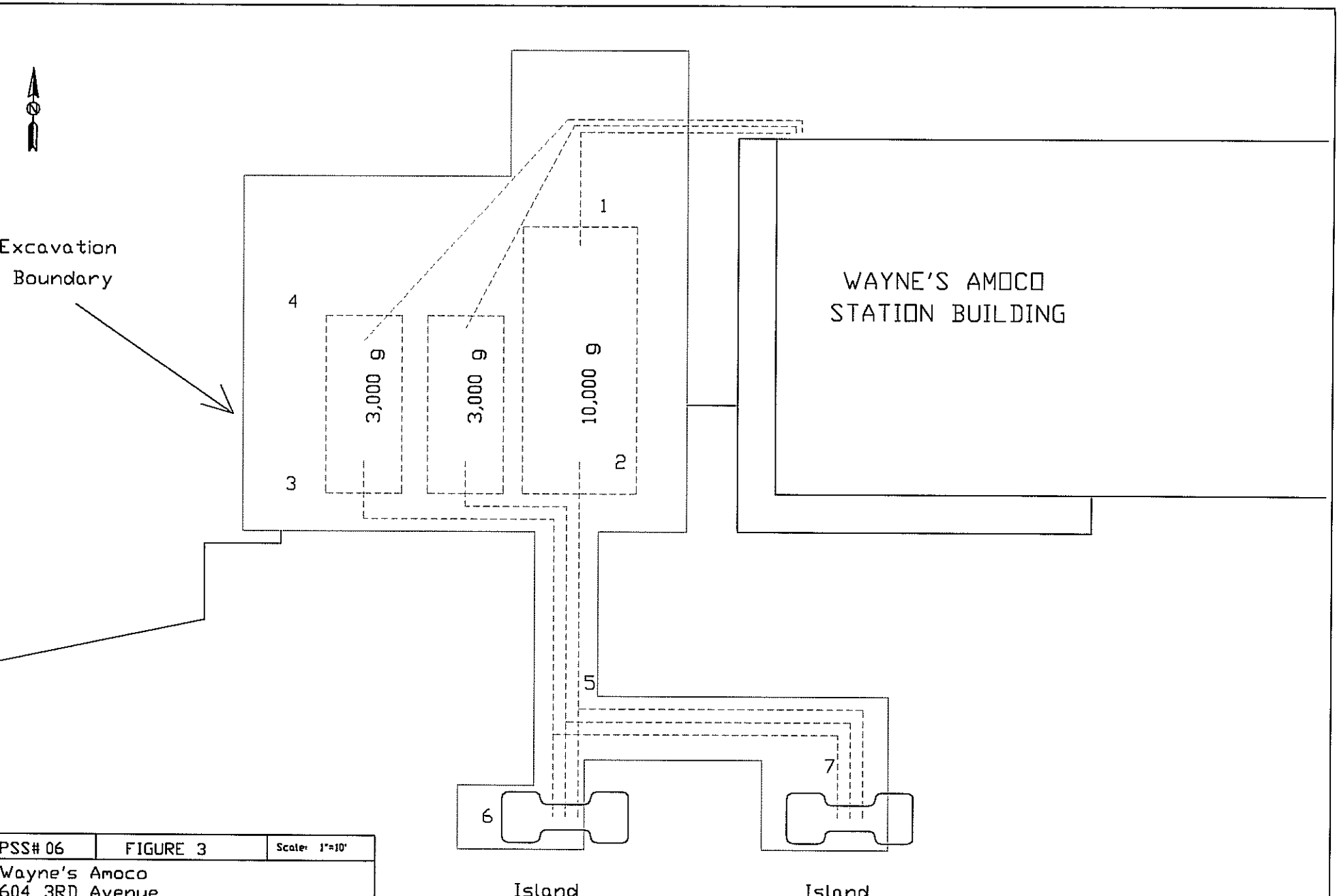
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #6	Figure 1
Topographic Site Location Map Wayne's Amoco 604 3rd Avenue South Clear Lake, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



PSS# 06	FIGURE 2	Scale: 1"=30'
Wayne's Amoco 604 3RD Avenue South Clear Lake, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 06	FIGURE 3	Scale: 1"=10'
Wayne's Amoco 604 3RD Avenue Clear Lake, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04060232-001
Client Sample ID: Lavin-10K East-13'

Report Date: 07/12/04
Collection Date: 06/10/04 13:10
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/20/04 05:57/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 05:57/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/20/04 05:57/SN
Ethylbenzene	0.54	mg/kg		0.20		1	SW8021B	06/20/04 05:57/SN
Xylenes, Total	0.26	mg/kg		0.20		1	SW8021B	06/20/04 05:57/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/20/04 05:57/SN
Surr: Trifluorotoluene	101	%REC			70-130		SW8021B	06/20/04 05:57/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	180	mg/kg		10		1	CA-LUFT	06/20/04 05:55/SN
Surr: Trifluorotoluene	170	%REC	S		60-150		CA-LUFT	06/20/04 05:55/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04060232-002
Client Sample ID: Lavin-10K West-12'

Report Date: 07/12/04
Collection Date: 06/10/04 13:00
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:11/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:11/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:11/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:11/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:11/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:11/SN
Surr: Trifluorotoluene	94.5	%REC			70-130		SW8021B	06/19/04 20:11/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	8	mg/kg	J	10		1	CA-LUFT	06/19/04 20:09/SN
Surr: Trifluorotoluene	98.8	%REC			60-150		CA-LUFT	06/19/04 20:09/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04060232-003
Client Sample ID: Lavin-NW-12'

Report Date: 07/12/04
Collection Date: 06/10/04 15:00
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:43/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:43/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:43/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:43/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:43/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/19/04 20:43/SN
Surr: Trifluorotoluene	95.2	%REC			70-130		SW8021B	06/19/04 20:43/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	3	mg/kg	J	10		1	CA-LUFT	06/19/04 20:42/SN
Surr: Trifluorotoluene	98.8	%REC			60-150		CA-LUFT	06/19/04 20:42/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04060232-004
Client Sample ID: Lavin-NE-12'

Report Date: 07/12/04
Collection Date: 06/10/04 14:50
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:16/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:16/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:16/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:16/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:16/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/19/04 21:16/SN
Surr: Trifluorotoluene	95.8	%REC			70-130		SW8021B	06/19/04 21:16/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/19/04 21:14/SN
Surr: Trifluorotoluene	99.5	%REC			60-150		CA-LUFT	06/19/04 21:14/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

QA/QC Summary Report

Client: SD DENR
Project: Tank Pathology

Report Date: 07/12/04
Work Order: R04060232

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2309
Sample ID: MB-2309	Method Blank								06/19/04 17:58
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	107	60	150			
Sample ID: LCSG-2309	Laboratory Control Sample - generic								06/19/04 19:03
TPH as Gasoline	260	mg/kg	10	128	60	140			
Surr: Trifluorotoluene			0.40	103	50	200			
Sample ID: R04060233-001AMS	Sample Matrix Spike								06/19/04 23:58
TPH as Gasoline	260	mg/kg	10	132	60	140			
Surr: Trifluorotoluene			0.40	96.5	60	150			
Method: CA-LUFT									Batch: 2312
Sample ID: MB-2312	Method Blank								06/29/04 14:10
TPH as Fuel Oil	ND	mg/kg	10						
Naphthalene	ND	mg/kg	0.66						
Surr: o-Terphenyl			0.33	95.8	70	130			
Sample ID: LCS-2312	Laboratory Control Sample - generic								06/29/04 14:51
TPH as Fuel Oil	480	mg/kg	10	96	75	125			
Surr: o-Terphenyl			0.33	92.2	70	130			
Sample ID: LCSD-2312	Laboratory Control Sample Duplicate								06/29/04 15:31
TPH as Fuel Oil	401	mg/kg	10	80.2	75	125	18	20	
Surr: o-Terphenyl			0.33	88.5	70	130			
Sample ID: R04060279-001AMS	Sample Matrix Spike								06/29/04 20:53
TPH as Fuel Oil	466	mg/kg	10	93.2	75	125			
Surr: o-Terphenyl			0.33	92.7	70	130			
Sample ID: R04060279-001AMSD	Sample Matrix Spike Duplicate								06/29/04 21:32
TPH as Fuel Oil	393	mg/kg	10	78.6	75	125	17	20	
Surr: o-Terphenyl			0.33	81.6	70	130			
Method: CA-LUFT									Analytical Run: GCPID1-R_040619A
Sample ID: CCV_0619hp402r-S	Continuing Calibration Verification Standard								06/19/04 16:02
TPH as Gasoline	22	mg/kg	10	110	75	125			
Surr: Trifluorotoluene			0.40	101	50	150			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: Tank Pathology

Report Date: 07/12/04
Work Order: R04060232

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: 2309
Sample ID: MB-2309	Method Blank								06/19/04 18:00
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	106	70	130			
Sample ID: LCSB-2309	Laboratory Control Sample - generic								06/19/04 18:32
Methyl tert-butyl ether (MTBE)	7.5	mg/kg	0.20	83.3	60	130			
Benzene	8.0	mg/kg	0.20	89	60	130			
Toluene	8.2	mg/kg	0.20	91.2	60	130			
Ethylbenzene	8.0	mg/kg	0.20	88.7	60	130			
Naphthalene	5.5	mg/kg	0.20	61.6	60	130			
Xylenes, Total	24	mg/kg	0.20	88.7	60	130			
Surr: Trifluorotoluene			0.20	97	60	130			
Sample ID: R04060233-001AMS	Sample Matrix Spike								06/20/04 01:05
Methyl tert-butyl ether (MTBE)	6.0	mg/kg	0.20	66.1	50	130			
Benzene	6.6	mg/kg	0.20	73.9	50	130			
Toluene	6.9	mg/kg	0.20	76.2	50	130			
Ethylbenzene	6.7	mg/kg	0.20	74.1	50	130			
Naphthalene	3.6	mg/kg	0.20	40.1	50	130			S
Xylenes, Total	20	mg/kg	0.20	74.9	50	130			
Surr: Trifluorotoluene			0.20	96.5	50	130			
Method: SW8021B									Analytical Run: GCPID1-R_040619A
Sample ID: CCV_0619hp401r-S	Continuing Calibration Verification Standard								06/19/04 15:32
m+p-Xylenes	19	mg/kg	0.20	95	85	115			
o-Xylene	10	mg/kg	0.20	100	85	115			
Methyl tert-butyl ether (MTBE)	9.5	mg/kg	0.20	94.8	85	115			
Benzene	10	mg/kg	0.20	100	85	115			
Toluene	10	mg/kg	0.20	100	85	115			
Ethylbenzene	10	mg/kg	0.20	100	85	115			
Naphthalene	7.6	mg/kg	0.20	75.6	85	115			S
Surr: Trifluorotoluene			0.20	100	85	115			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: ~~[illegible]~~ Tank Pathology		
Report Mail Address: 523 East Capitol Pierre SD	Contact Name, Phone, Fax, E-mail: Terry 773 3296	Sampler Name if other than Contact:	
Invoice Address: same	Invoice Contact & Phone #: same	Purchase Order #:	ELI Quote #:

JUL 2004 RECEIVED DENR

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Receipt Temp 8.2 °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegetation Bioassay Other / MATRIX	BTEX	TPH as gasoline	TPH as diesel						SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments	LABORATORY USE ONLY
1	LAVIN-10K East-13'	6/10/04	1:10p	1 S	X	X								/			R04060232-001
2	LAVIN-10K West-12'	6/10/04	1:00p	1 S	X	X								/			002
3	LAVIN-NW-12'	6/10/04	3:00p	1 S	X	X								/			003
4	LAVIN-NE-12'	6/10/04	2:50p	1 S	X	X								/			004
5	Elkton-Island-2'	6/11/04	~~1:30~~ p	1 S	X	X								/		1:30 p time	005
6	Elkton-Diesel #1-9'	6/11/04	2:15p	1 S			X							/			006
7	Elkton-Gasoline #2-9'	6/11/04	2:55	1 S	X	X								/			007
8	Elkton-Effluent #3-9'	6/11/04	3:15p	1 S	X	X								/			008
9														/			
10														/			

Custody Record MUST be Signed

Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 6-15-04 15:00
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: X

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	7	Contact :	Steve Stone
Site Name:	Stone's Truck Stop	Address :	3800 9 th Avenue SE
Address:	3800 9th Avenue SE	City :	Watertown
City :	Watertown	Phone :	605-882-1484
County :	Codington		

Legal Description of Property: Lot 1 Block 4, Fox addition, city of Watertown SE1/4 34-117-52

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☒	☐	☐
☒	Dates of upgrades or replacement of the storage tank systems.	☒	☐	☐
☒	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☒	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☒	☐	☐
☒	Electronic release detection equipment monthly function checks.	☒	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☒	Monthly release detection results.	☒	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☒	Results of tightness, pressure, and integrity tests.	☒	☐	☐
☒	SD DENR Inspection Records	☒	☐	☐

LINE TIGHTNESS TEST REPORT FORM

Testing Company :O'Day Equipment	Phone Number: 605-338-5030
Name of Person(s) Performing Test: Clint Morgan	Tester Certification Number and Expiration Date: EXP 5-11-06
Manufacturer of Test Equipment / Model or Version: Petro Tite	
Equipment Threshold, GPH: .05 gph	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: 5-17-04 gas , 5-21 & 22 diesel	

Pressure Test																		Helium Test			
				Line Test Results																	
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	45	1.5"250'	1000	.001	.004	0	0	0	0	0	0					1045	P	1300	45	1400	P
2	45	1.5"225'	1130	.001	.004	.007	.03	.003	.012	.002	.008	0	0	0	0	1245	P	1400	45	1500	P
3	47	1.5"195'	1755	0	0	0	0									1810	P	1600	50	1700	P
4	49	1.5"180'	1330	0	0	0	0									1345	P	1700	50	1800	P06-
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☒	Tight Fill
☐	Other Approved	☒	Other manifolded #2 diesel tanksS	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☒	Pea Rock				
☒	Other sand				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☒	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☒	Manifolded	☐	Unknown
☒	Pea Rock	☐	Bulk Product		
☒	Other sand/gravel	☐	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☒	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 06/ 02 / 2004 month/day/year
Estimated number of gallons discharged: Unknown

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☒	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☒	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☒ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes? Automatic Tank Gauge and Statistical Inventory Reconcilition (SIR)

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☒	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:

Explanation:

Spill bucket on diesel ust appeared to be faulty or damaged. There may also have been historic overfills / spills prior to the 1998 upgrades

Cause of the Discharge

☒	Loose Component	☒	Spill	☐	Improper Installation
☐	Corrosion	☒	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☒	Material Failure	☐	Human Error	☒	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other

Explanation:

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☒	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

The study at this site was complicated by the simultaneous installation of new gasoline tanks and operating in an active truckstop. Plan and record retention was good for this site and were readily available from the owner. Piping system had been modified since the original installation. An addition to the station building caused the product lines to be re-routed. The new portion of piping installed was fiberglass and the original pipe was steel. The original diesel islands had been abandoned and new USTs & piping previously installed.

Contamination was noted in the tank basin. It appeared to have been caused at least in part by defective or damaged spill buckets. Historic spills / overfills may have also been a cause. The tanks and lines were found to be in good condition and passed tightness and helium tests.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Stone Oil Inc.'s Truck Stop

Street Address: JCT HWY 212 & I-29 City: Watertown

Owner: Steve Stone Phone #: 605-886-5007

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	12,000	Gasoline	Good
2	12,000	Gasoline	Good
3	12,000	Diesel	Good
4	10,000	Diesel	Good
5	10,000	Diesel	Good

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 205'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 3 Number of islands removed: 3

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes X No ____ If yes, at what depth? 12'

Was free product encountered in the excavation? Yes ____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 214 Loose cubic yards of fill used: 606

Tank basin was backfilled with sand.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin consisted of washed sand. This sand extended two feet around the tanks and one foot below the tanks. The water noted in the basin was the result of a bath tub affect. At 14 feet clay with some gravel and sand made up the native soils. Of the native soils, no visible contamination was observed, no petroleum odors were noted. PID readings of the native soils detected 40 ppm under the gasoline tanks and 10 ppm under the diesel tanks. The backfill material was visually impacted by both gasoline and diesel and was removed as best it could be. Because of the sloughing a lot of the impacted sand was not removed. Three feet beyond the west wall of the excavation is a gas line. Within feet of the east wall of the excavation are electrical lines/conduits. An air conditioner unit located at the southeast corner of the excavation had to be stabilized by the use of a boom while the last two tanks were removed.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

Table 1
PID Readings for Selected Soil Samples
Stone's Truck Stop
Watertown, South Dakota

Sample ID	Location	Depth (ft)	PID
T1-13'(Tank 1-13 feet)	Below Tank 1 South end	13	120.0
Surface Sample	Between T4 & T5	3 inches	40.0

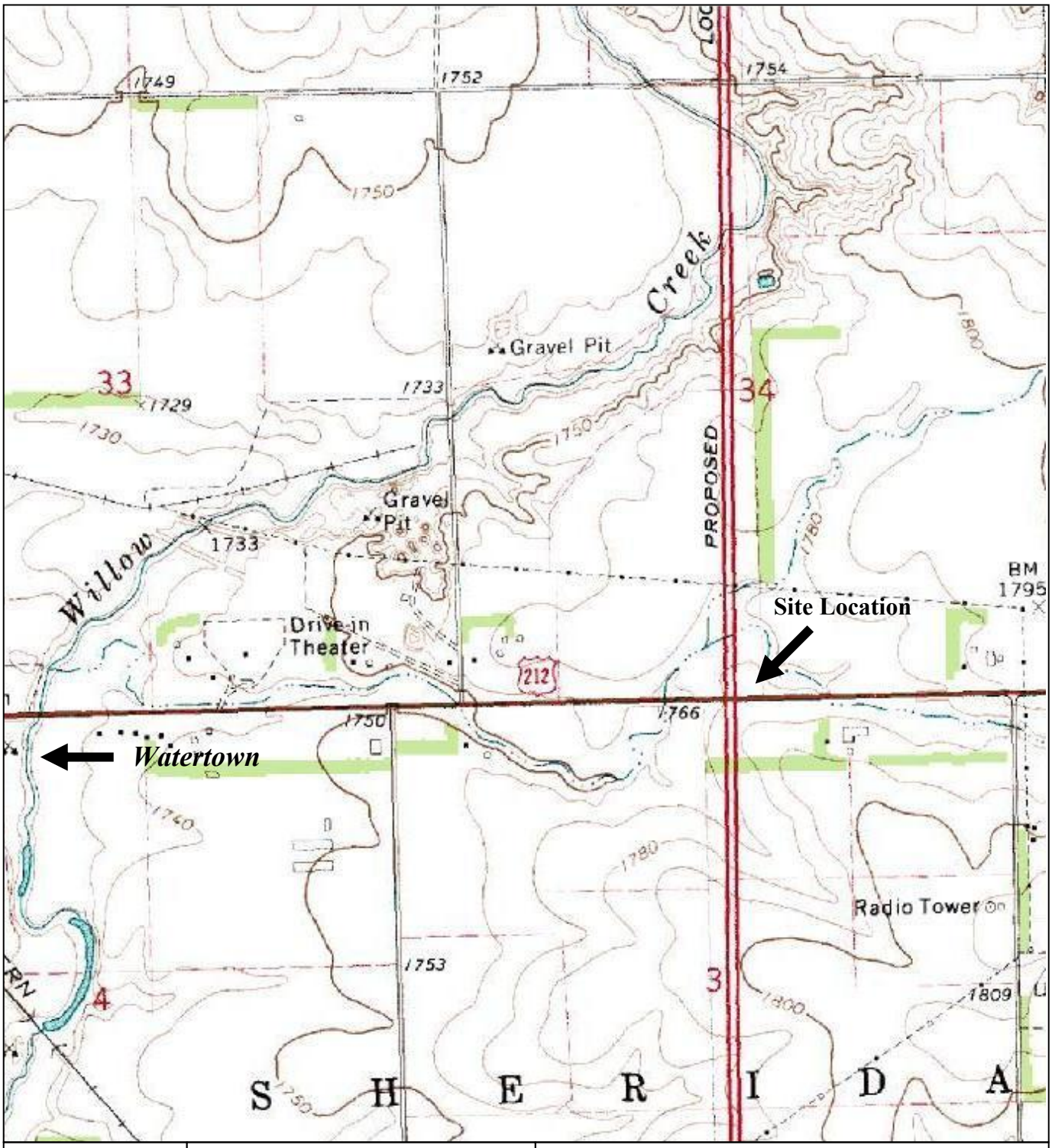
Table 2
Analytical Results for Soil Samples
Stone's Truck Stop
Watertown, South Dakota

Sample ID	Depth in Feet	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	TPH as Diesel	Naphthalene
PS1 (Piping Sample 1)	4	<.20	<.20	<.20	<.20	<10.0		
PS2	4	<.20	<.20	<.20	<.20	<10.0		
PS3	5	<.20	<.20	<.20	<.20	<10.0		
PS4	5	<.20	<.20	<.20	<.20	<10.0		
PS5	4						13.7	
EIS1 (East Island Sample 1)	4						433.	
EIS2	4						**1296.**	
MIS3	4						45.7	
MIS4	3						**927.**	
WIS5	5						**996.**	
WIS6	4						**1042.**	
T1NS1 (Tank 1 North end Sample 1)	14.5-15	<.20	<.20	<.20	<.20	<10.0		
T1MS2	14.5-15	<.20	<.20	<.20	<.20	<10.0		
T1SS3	14.5-15	<.20	<.20	<.20	<.20	<10.0		
T2NS4	14.5-15	<.20	<.20	<.20	<.20	<10.0		
Tier 1 Action Levels	--	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

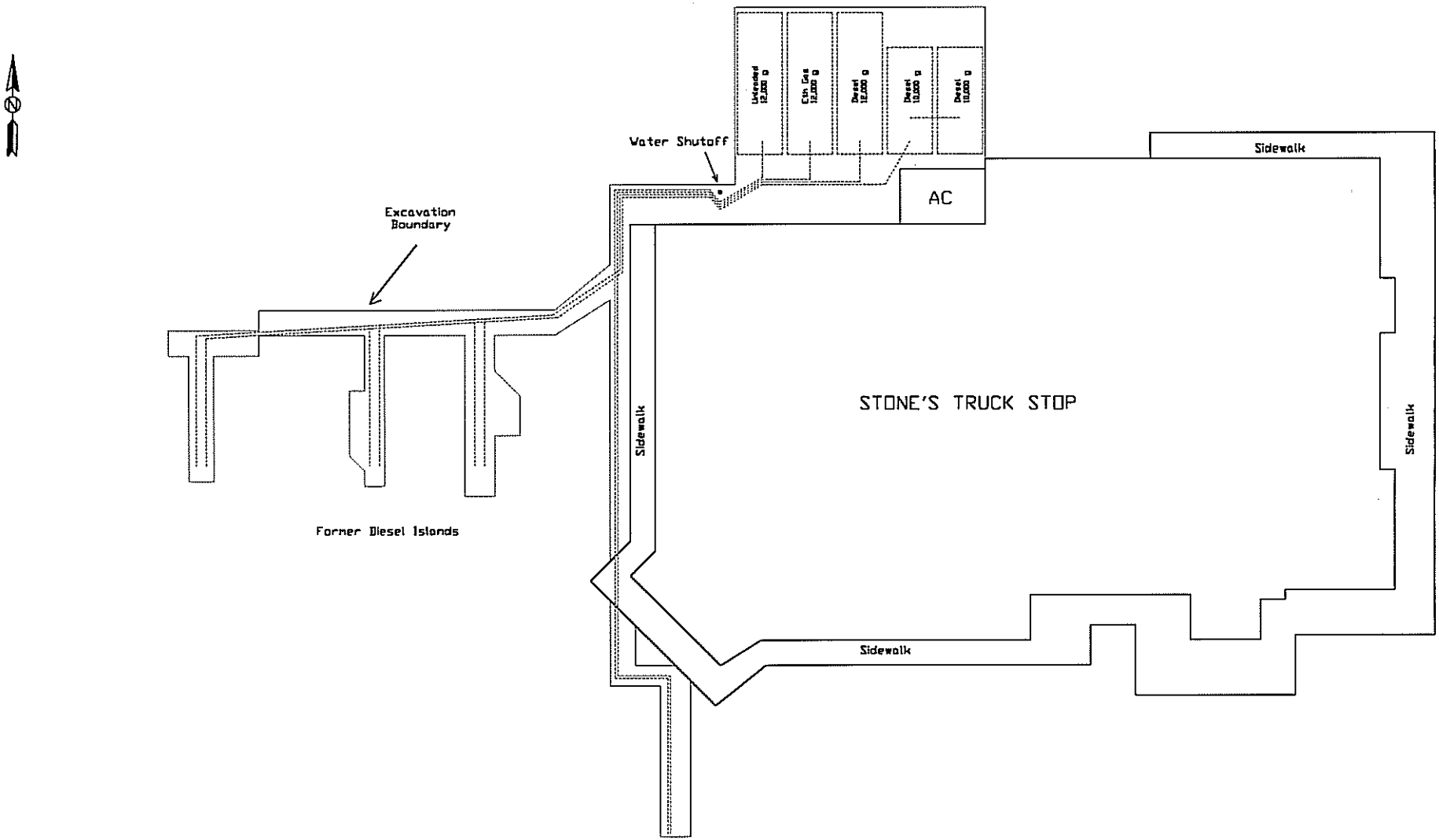
Table 2 (Continued)
Analytical Results for Soil Samples
Stone's Truck Stop
Watertown, South Dakota

T2MS5	14.5-15	<.20	<.20	<.20	<.20	<10.0		
T2SS6	14.5-15	<.20	<.20	<.20	<.20	<10.0		
T3NS7	14	<.20	<.20	<.20	<.20	<10.0		
T3MS8	14	<.20	<.20	<.20	<.20	<10.0		
T3SS9	14	<.20	<.20	<.20	<.20	<10.0		
T4NS10	14.5-15						<10.0	
T4MS11	14.5-15						<10.0	
T5NS13							<10.0	
T5MS14							<10.0	
Surface Sample	0.25						**8,687.**	
T1-13'	13	**8.62**	**36.8**	**110.0**	**425.0**	**1192.0**	<	
Tier 1 Action Levels	--	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

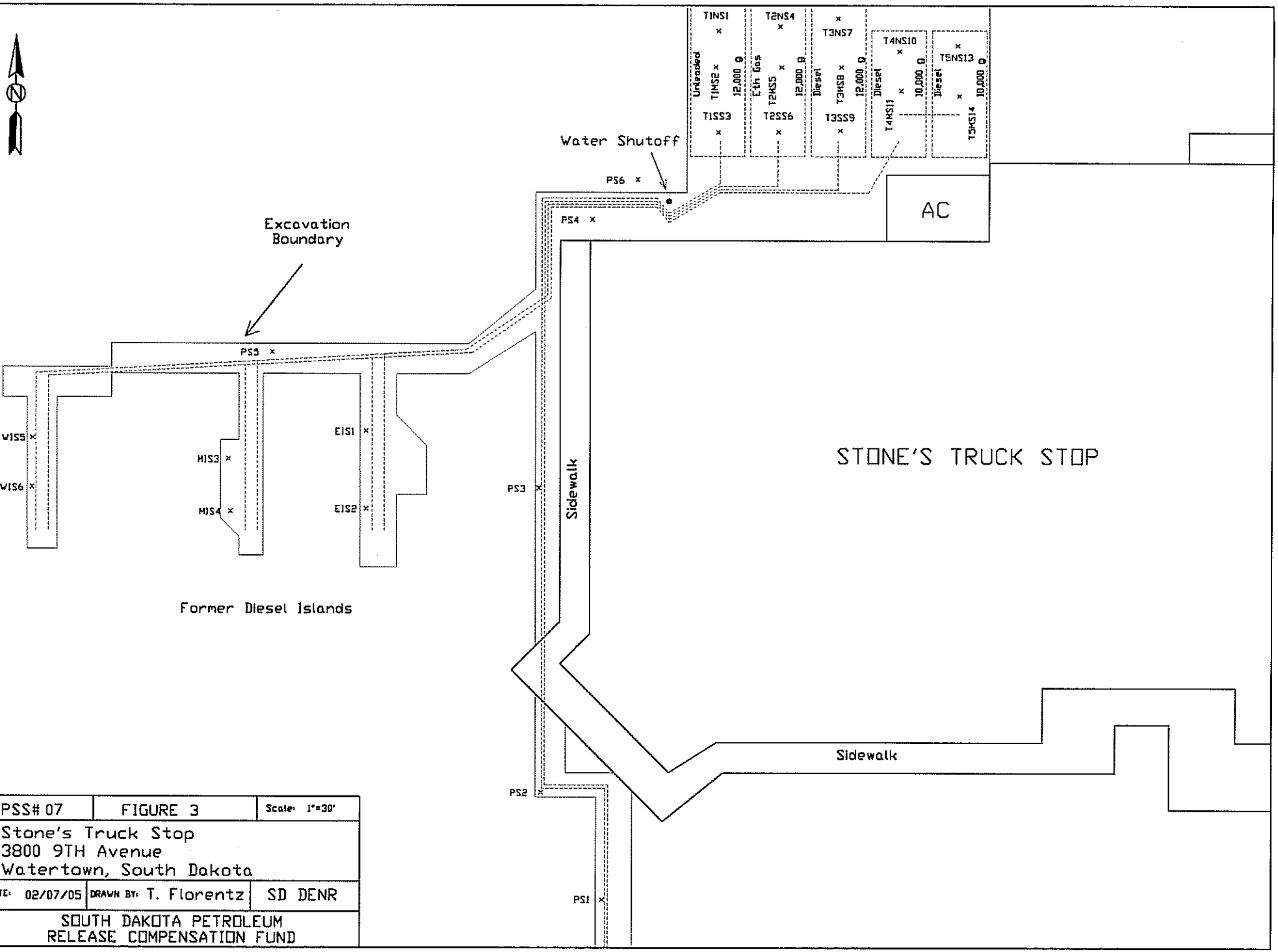
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #7	Figure 1
Topographic Site Location Map Stone's Truck Stop 3800 9th Avenue (Hwy 212 & I-29) Watertown, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



TPSS# 07	FIGURE 2	Scale: 1"=30'
Stone's Truck Stop 3800 9TH Avenue Watertown, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 07	FIGURE 3	Scale: 1"=30'
Stone's Truck Stop 3800 9TH Avenue Watertown, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

PROJECT:
STONE OIL CO, INC.

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0520

DATE: June 01, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: May 20 , 2004
DATE RECEIVED: May 20, 2004

SAMPLER: Scott Bickler SD DENR 362-350

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
PS1	1673-04					
	5/24/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	California USGS	TPH as Gasoline	*<10.00	mg/kg	10 mg/kg
Comments: * - Slight TPH contamination present.						
PS2	1674-04					
	5/24/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	California USGS	TPH as Gasoline	*<10.00	mg/kg	10 mg/kg
Comments: * - Slight TPH contamination present.						
PS3	1675-04					
	5/24/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

PROJECT:
STONE OIL CO, INC.

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0520

DATE: June 01, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: May 20 , 2004
DATE RECEIVED: May 20, 2004

SAMPLER: Scott Bickler SD DENR 362-350

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
PS4	1676-04					
	5/24/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	5/24/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
EIS1	1677-04					
	5/27/2004	California USGS	TPH as Diesel	433	mg/kg	10 mg/kg
EIS2	1678-04					
	5/27/2004	California USGS	TPH as Diesel	1296	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

PROJECT:
STONE OIL CO, INC.

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0520

DATE: June 01, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: May 20 , 2004
DATE RECEIVED: May 20, 2004

SAMPLER: Scott Bickler SD DENR 362-350

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
MIS4	1679-04					
	5/27/2004	California USGS	TPH as Diesel	927	mg/kg	10 mg/kg
MIS3	1680-04					
	5/27/2004	California USGS	TPH as Diesel	45.7	mg/kg	10 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

Chain of Custody and Analytical Request Record

DENR 05020

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: Stone Oil Co, Inc.	Project Name, PWS #, Permit #, Etc.: Stone Oil Truck Stop - Watertown
Report Mail Address: Terry Florentz, DENR-GWQ, 523 E Capitol Ave, Pierre, SD 57501-3182	Contact Name, Phone, Fax, E-mail: Scott Bickler (605) 362-3500 — Sampler Name if other than Contact:
Invoice Address: (605) 773-3296 ↓ 04-434-3 same	Invoice Contact & Phone #: → same — Purchase Order #: — ELI Quote #:

JUN 2004 RECEIVED DENR Ground Water Assistance Program

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments: Send bill & results to the Report Mail Address

Receipt Temp ____ °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	TPH-G	BTEX	TPH-Diesel	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments	LABORATORY USE ONLY Lab ID
1	PS1 1 1/2' below piping	5-20	915a	soil	X	X					no odor 1673	1673
2	PS2 1 1/2' below piping	5-20	935a	soil	X	X					1674	1674
3	PS3 1 1/2' below piping	5-20	10:10a	soil	X	X					1675	1675
4	PS4 1 1/2' below piping	5-20	10:45a	soil	X	X					1	1676
5	EIS1 3' below N pump	5-20	11:15	soil			X					1677
6	EIS2 3 1/2" below S pump	5-20	11:30	soil			X					1678
7	~~EIS3 3' below N pump~~	~~5-20~~	~~12:07~~	~~soil~~			~~X~~				~~pid 90~~	~~1679~~
8	MIS4 3' below S pump	5-20	12:20	soil			X				pid 35	1679
9	MIS3 5 1/2' below N pump	5-20	2:15	soil			X				Pid 10	1680
10												

Custody Record MUST be Signed

Relinquished by: Scott Bickler	Date/Time: 5-20-04 4:16p	Shipped by:	Received by: — Date/Time:
Relinquished by:	Date/Time:	Shipped by:	Received by: [signature] Date/Time: 5-20-04 4:05

Sample Disposal: Return to client: ____ Lab Disposal: X

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

PROJECT:
STONE OIL CO, INC.

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18381

DATE: June 02, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: May 26 , 2004
DATE RECEIVED: May 27, 2004

SAMPLER: Dan Martin

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
T4NS 10	1748-04					
	6/1/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg
Comments: Sample pH <2.						
T4MS 11	1749-04					
	6/1/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg
Comments: Sample pH <2.						
T5NS 13	1750-04					
	6/1/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg
Comments: Sample pH <2.						
T5MS 14	1751-04					
	6/1/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg
Comments: Sample pH <2.						

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

SN: 18381

GEOTEK ENGINEERING & TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, SD 57104
Telephone (605) 335-5512 • Fax (605) 335-0773

CHAIN OF CUSTODY RECORD
Analytical Request

LAB: _____

GEOTEK PROJECT NAME Stone's Truck Stop

Address Jct Hwy 212 & I-29
Watertown, SD 57201

Geotek Project # 04-434-3

Geotek Project Manager _____

P.O. #/Billing Reference Terry Florentz - DENR - C-WQ

Bill To 523 E Capitol, Pierre SD 57501-3182

TRANSMITTAL OF RESULTS

Report To Terry Florentz -

Fax? DENR

Express Mail? _____

Standard Mail? _____

Sampled by (PRINT) Dave Martin Phone# _____

Sampler Signature [signature] Date Sampled 5-26-04

ANALYSIS REQUESTED

Sample No.	Sample Description		Sample Type	No. of Contain.	PID Reading	LABORATORY METHODS (State Regulatory Agency)	BTEX	TH as Gasoline	Naphthalene	TH as Fuel Oil/Diesel	TH as Waste Oil	Benzene Toluene	MTBE	n-Hexane		Speed of Analysis No. days if other than standard turnaround	Remarks
1448	T4NS10	11:50	soil	1						X							
1749	T4MS11	1155	↓	↓						X							
1750	~~T4SS12~~									X							
1751	T5NS13	1245								X							
	T5MS14	1255								X							
	~~F5SS15~~									X							

JUN 2004 RECEIVED DENR

Relinquished by Sampler: (Signature)	DATE/TIME	Received by Shipper: (Signature)	DATE/TIME	Method of Shipment:
Scott Bichler	5-25-04			
Delivered by Shipper: (Signature)	DATE/TIME	Received by Laboratory: (Signature)	DATE/TIME	
		Kathen [signature]	5-27-04 10:00	

LABORATORY: Was cooler received with Chain of Custody Seal intact? ___ Yes ___ No Initials _____

Form 13682

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

PROJECT:
STONE OIL CO, INC.

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18471

DATE: June 09, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: May 25 , 2004
DATE RECEIVED: May 26, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
T2SS6	1727-04					
	6/1/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
T2NS4	1728-04					
	6/1/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
T2MS5	1729-04					
	6/1/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

PROJECT:
STONE OIL CO, INC.

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18471

DATE: June 09, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: May 25 , 2004
DATE RECEIVED: May 26, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
T3NS7	1730-04					
	6/3/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg
T3MS8	1731-04					
	6/1/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg
T3SS9	1732-04					
	6/1/2004	California USGS	TPH as Diesel	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

PROJECT:
STONE OIL CO, INC.

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18471

DATE: June 09, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: May 25 , 2004
DATE RECEIVED: May 26, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

SN: 18471

GEOTEK ENGINEERING & TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, SD 57104
Telephone (605) 335-5512 • Fax (605) 335-0773

CHAIN OF CUSTODY RECORD
Analytical Request

LAB: _____

DENR ~~GEOTEK~~ PROJECT NAME Stone's Truck Stop

Address Jct Hwy 212 & I-29
Watertown, SD 57201

Geotek Project # 04-434-3

Geotek Project Manager _____

P.O. #/Billing Reference _____

Bill To Terry Florentz, DENR-GWQ, 523 E Capitol Ave, Pierre, SD 57501 3182

TRANSMITTAL OF RESULTS

Report To Terry Florentz - DEN.

Fax? _____

Express Mail? _____

Standard Mail? ✓

Sampled by (PRINT) Scott Bickler Phone# 362-3500

Sampler Signature Scott Bickler Date Sampled 5-25-04

ANALYSIS REQUESTED

Sample No.	Sample Description	Sample Type	No. of Contain.	PID Reading	LABORATORY METHODS (State Regulatory Agency)	BTEX	TH as Gasoline	Naphthalene	TH as Fuel Oil/Diesel	TH as Waste Oil	Benzene Toluene	MTBE	n-Hexane		Speed of Analysis No. days if other than standard turnaround	Remarks
T2SS6	14-15' bg 5-25-04 337	Soil	1		1727	X	X									
T2NS4	14-15' bg 5-25-04 333p	↓	↓		1728	X	X									
T2MS5	14-15' bg 5-25-04 330p			40	1729	X	X									
T3NS7	~~14'bg~~ 14' bg " 605				1730				X							
T3MS8	14' bg " 615				1731				X							
T3SS9	14' bg 620			10	1732				X							

JUN 2004 RECEIVED DENR Ground Water Quality Program

Relinquished by Sampler: (Signature)	DATE/TIME	Received by Shipper: (Signature)	DATE/TIME	Method of Shipment:
Scott Bickler	5-26-04			
Delivered by Shipper: (Signature)	DATE/TIME	Received by Laboratory: (Signature)	DATE/TIME	
		[signature]	5-26-04 8:30	

LABORATORY: Was cooler received with Chain of Custody Seal intact? ___ Yes ___ No Initials _____

(results faxed 6-9-04)

Form 13682

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

PROJECT:
STONE OIL CO, INC.
,

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18470

DATE: June 09, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: May 21 , 2004
DATE RECEIVED: May 26, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
WIS5	1719-04					
	6/3/2004	California USGS	TPH as Diesel	996	mg/kg	10 mg/kg
WIS6	1720-04					
	6/3/2004	California USGS	TPH as Diesel	1042	mg/kg	10 mg/kg
PS5	1721-04					
	6/3/2004	California USGS	TPH as Diesel	13.7	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

CHAIN OF CUSTODY # 18470

PROJECT:
STONE OIL CO, INC.

DATE: June 09, 2004

SAMPLE MEDIUM: SOIL

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501

PHONE:

DATE SAMPLED: May 21 , 2004
DATE RECEIVED: May 26, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
T4 & T5	1722-04					
	5/27/2004	California USGS	TPH as Diesel	8687	mg/kg	10 mg/kg
TINS1	1723-04					
	6/1/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
TIMS2	1724-04					
	6/1/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-434-3

CHAIN OF CUSTODY # 18470

PROJECT:
STONE OIL CO, INC.

DATE: June 09, 2004

SAMPLE MEDIUM: SOIL

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501

PHONE:

DATE SAMPLED: May 21 , 2004
DATE RECEIVED: May 26, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
TISS3	1725-04					
	6/1/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/1/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
T1 - 13'	1726-04					
	5/26/2004	EPA 8020	Benzene	8.62	mg/kg	2 mg/kg
	5/26/2004	EPA 8020	Toluene	36.80	mg/kg	2 mg/kg
	5/26/2004	EPA 8020	Ethylbenzene	110.00	mg/kg	2 mg/kg
	5/26/2004	EPA 8020	Xylenes	425.00	mg/kg	2 mg/kg
	5/26/2004	California USGS	TPH as Gasoline	1192.00	mg/kg	100 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

SN: 18470

GEOTEK ENGINEERING & TESTING SERVICES, INC.

909 East 50th Street North
Sioux Falls, SD 57104
Telephone (605) 335-5512 • Fax (605) 335-0773

CHAIN OF CUSTODY RECORD
Analytical Request

LAB: _____

DENR ~~GEOTEK~~ PROJECT NAME Stone's Truck Stop

Address Jct Hwy 212 & I-29
Watertown, SD 57201

Geotek Project # 04-434-3

Geotek Project Manager _____

P.O. #/Billing Reference _____

Bill To Terry Florentz, DENR-GWQ
523 E Capitol Ave, Pierre, SD 57501-3182

TRANSMITTAL OF RESULTS

Report To Terry Florentz - DENR

Fax? _____

Express Mail? _____

Standard Mail? ✓

Sampled by (PRINT) Scott Bickler Phone# 362-3500

Sampler Signature Scott Bickler Date Sampled 5-21-04

ANALYSIS REQUESTED

Sample No.	Sample Description	Sample Type	No. of Contain.	PID Reading	LABORATORY METHODS (State Regulatory Agency)	BTEX	TH as Gasoline	Naphthalene	TH as Fuel Oil/Diesel	TH as Waste Oil	Benzene Toluene	MTBE	n-Hexane		Speed of Analysis No. days if other than standard turnaround	Remarks
WIS5	below N pump 5-21-04 10:30 am	soil	1		1719				X							
WIS6	below S pump 5-21-04 10:05 am	↓	↓		1720				X							
PS 5	1 1/2' below piping 5-24-04 11:44 am				1721				X							
~~PS 6~~	~~1 1/2' below piping N~~ surface sample between 5-25-04 T4 & T5				1722				X							Rush visually im
T1NS1	clay 14-15' ↓ 5-25 2:06 p				1723	X	X								Fax to	Scott Bickler
T1MS2	clay 14-15' ↓ 5-25 1:57 p				1724	X	X									2768
T1SS3	clay 14-15' ↓ 5-25 1:50 p				1725	X	X									(results faxed 6-9-04)
~~T2NS4~~	T1-13' Sand 5-25 10:58 am	↓	↓	120	1726	X	X								Rush	Sandy, wet, vis impa
~~T2NS5~~																

Relinquished by Sampler: (Signature)	DATE/TIME	Received by Shipper: (Signature)	DATE/TIME	Method of Shipment:
Scott Bickler	5-26-04			
Delivered by Shipper: (Signature)	**DATE/TIME**	**Received by Laboratory: (Signature)**	**DATE/TIME**	
		[signature]	5-26-04 8:30	

JUN 2004 RECEIVED DENR Ground Water Quality Program

LABORATORY: Was cooler received with Chain of Custody Seal intact? ___ Yes ___ No Initials _____

Form 13682

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	8	Contact :	Gary French
Site Name:	Sioux Valley Coop	Address :	220 10th Street NW
Address:	1 1st Avenue NE	City :	Watertown
City :	Watertown	Phone :	605-886-5829
County :	Codington		

Legal Description of Property: Community Oil Co. Outlots in NE 1/4 31-117-52 Watertown City

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☒	☐	☐
☒	Dates of upgrades or replacement of the storage tank systems.	☒	☐	☐
☒	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☒	☐
☒	Manufacturer's performance claims for your leak detection system.	☒	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☐	☒	☐
☒	Electronic release detection equipment monthly function checks.	☐	☒	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☒	Monthly release detection results.	☐	☒	☐
☐	Results of internal inspections.	☐	☐	☐
☒	Results of tightness, pressure, and integrity tests.	☐	☒	☐
☒	SD DENR Inspection Records	☐	☒	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	2	10,000 gallon	4	4,000 gallon		
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	O'Day Equipment
Tank Installation Date:	1988
Tank Installer Name:	O'Day Equipment

Piping Manufacturer Name:	A.O Smith Fiberglass
Piping Installation Date:	1988
Piping Installer Name:	O'Day Equipment

Notes

LINE TIGHTNESS TEST REPORT FORM

Testing Company :O'Day Equipment Company	Phone Number: 605-338-5030
Name of Person(s) Performing Test: Clint Morgan	Tester Certification Number and Expiration Date: # SDO0101051106C Exp: 5-11-06
Manufacturer of Test Equipment / Model or Version: Petro Tite	
Equipment Threshold, GPH: 0.05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: May 26-27, 2004	

				Pressure Test														Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	50	1.5"140'	1630	.001	.004	.001	.004	0	0	0	0					1715	P	1200	45	1300	P
2	50	1.5"140'	820	.004	.004	0	0	0	0	0	0					905	P	1300	45	1400	P
3	48	1.5"170'	1230	0	0	0	0	0	0							1300	P	1400	45	1500	P
4	48	1.5"180'	1500	0	0	0	0									1515	P	1500	45	1600	P
5	51	1.5"170'	1800	.002	.008	.001	.004	0	0	0	0					1845	P	1600	45	1700	P
6	48	1.5"40'	1355	.005	.02	.004	.016	0	0	0	0					1440	P	1700	45	1800	P

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☐	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☒	Flow Shut-Off
☐	Unknown	☐	Compartmented	☒	Tight Fill
☐	Other Approved	☐	Other	☒	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☒	Pea Rock				
☐	Other				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☒	Single check valve
	Bedding Material	☒	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☒	Pea Rock	☐	Bulk Product		
☐	Other	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☒	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Additional Information

If additional sheets are necessary, please attach them to the back of this form

Documentation at this site was good. The installer (from 1988) had left a binder with all of the equipment literature and specifications and this had been retained by the station operator. Inspection and testing records were also available, but not complete.

The system was found to be in good shape when removed. The exception was some of the spill buckets which were found to have malfunctioned and caused visible contamination near the fill pipe. The contamination did not extend beyond the tank basin backfill and no further work is required.

The station sold two products not usualy encountered. One tank held E-85 ethanol blend (85% ethanol 15% gas) and another tank held kerosene. When the precision test was done on the E-85 line, the high percentage of alcohol damaged the seals on the tester. The kerosene line was a suction line while all others were pressurized.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Sioux Valley Coop/Ampride

Street Address: 11 1ST Avenue NE City: Watertown

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	10,000	Ethanol Gasoline	good
2	10,000	Unleaded Gasoline	good
3	4,000	Diesel	good
4	4,000	Diesel	good
5	4,000	E85 Ethanol Gasoline	good
6	4,000	Kerosene	good

Piping

Was the piping removed at this site? Yes x No ____

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 2 Number of islands removed: 2

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No x If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No x If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 13 Loose cubic yards of fill used: 225

Imported backfill consisting of silty clay till was used to replace the tank volume.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin had been backfilled with pea rock, with sand sidewalls to approximately 16 feet. Visible contamination was observed in the tank backfill associated with the south 4,000-gallon diesel tank. Visible staining of the pea rock by diesel fuel originated from a broken spill bucket. All tanks at this site were in excellent condition, and did not appear to contribute to the release. One load of diesel-contaminated soil was removed from below the south diesel tank, which removed nearly all of the grossly-contaminated soil associated with that release. Soil samples submitted for laboratory analysis indicated that soil remaining below the leaking spill bucket still exceeded the trigger level of 500 ppm. Due to the limited scope of the release, additional assessment and cleanup of this diesel release does not appear to be warranted.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Terry Florentz Signature: _____ Date: _____

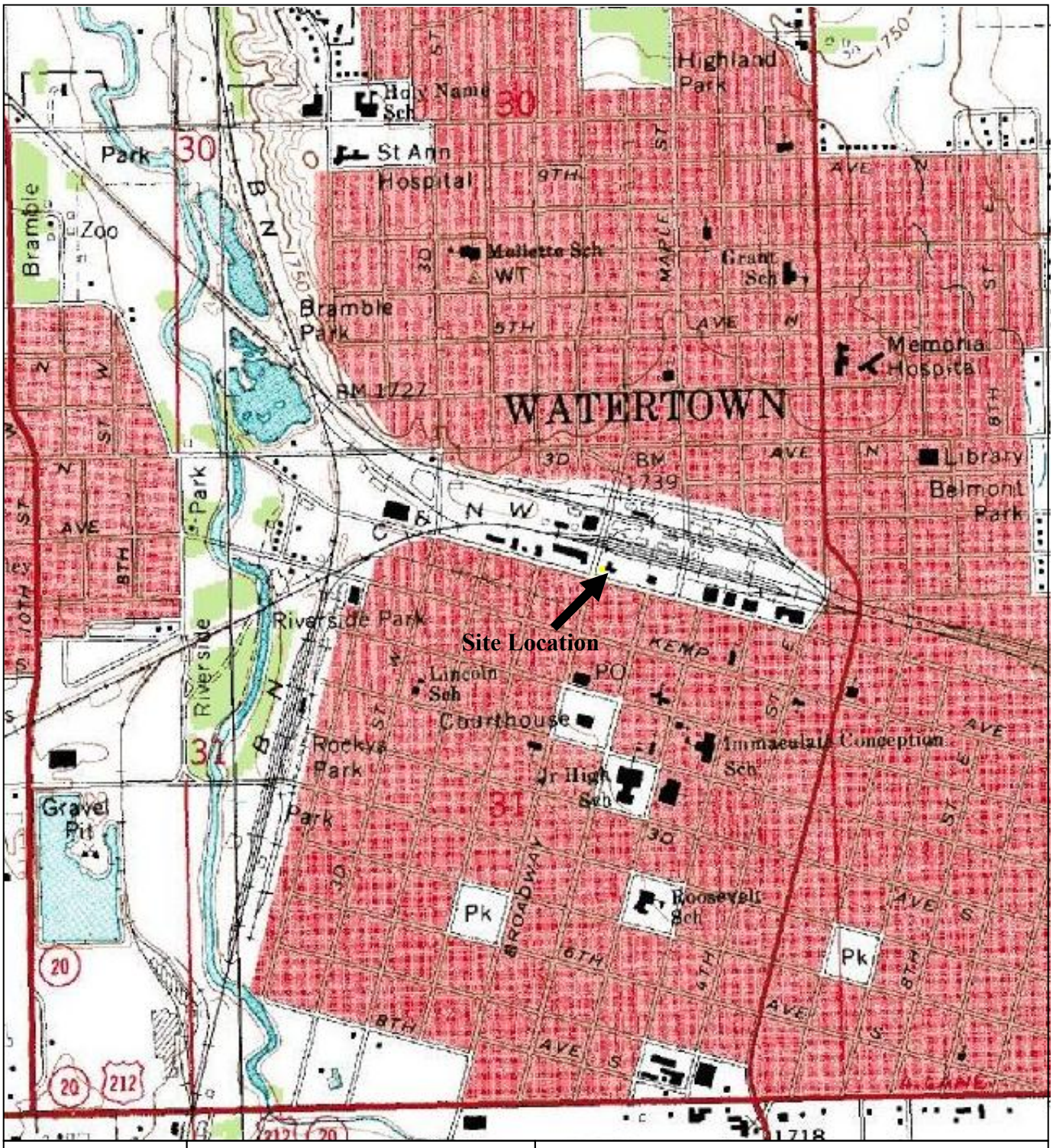
Table 1
PID Readings for Selected Soil Samples
Sioux Valley Coop/Ampride
Watertown, South Dakota

Sample ID	Location	Depth (ft)	PID
#1	SW Tank Basin	16	0.0
#2	SE Tank Basin	16	0.0
#3	NW Tank Basin	12	0.0
#4	West Middle Tank Basin (Landfill Sample)	8	110.0
#4	West Middle Tank Basin	13	16.0
#5	NE Tank Basin	12	0.0
#6	East Middle Tank Basin	12	0.0
#7	East Piping	3	2.6
#8	East Island	3	4.5
#9	West Piping	3	20.9
#10	West Island	3	6.4
#11	Kerosene Island	3	2.0

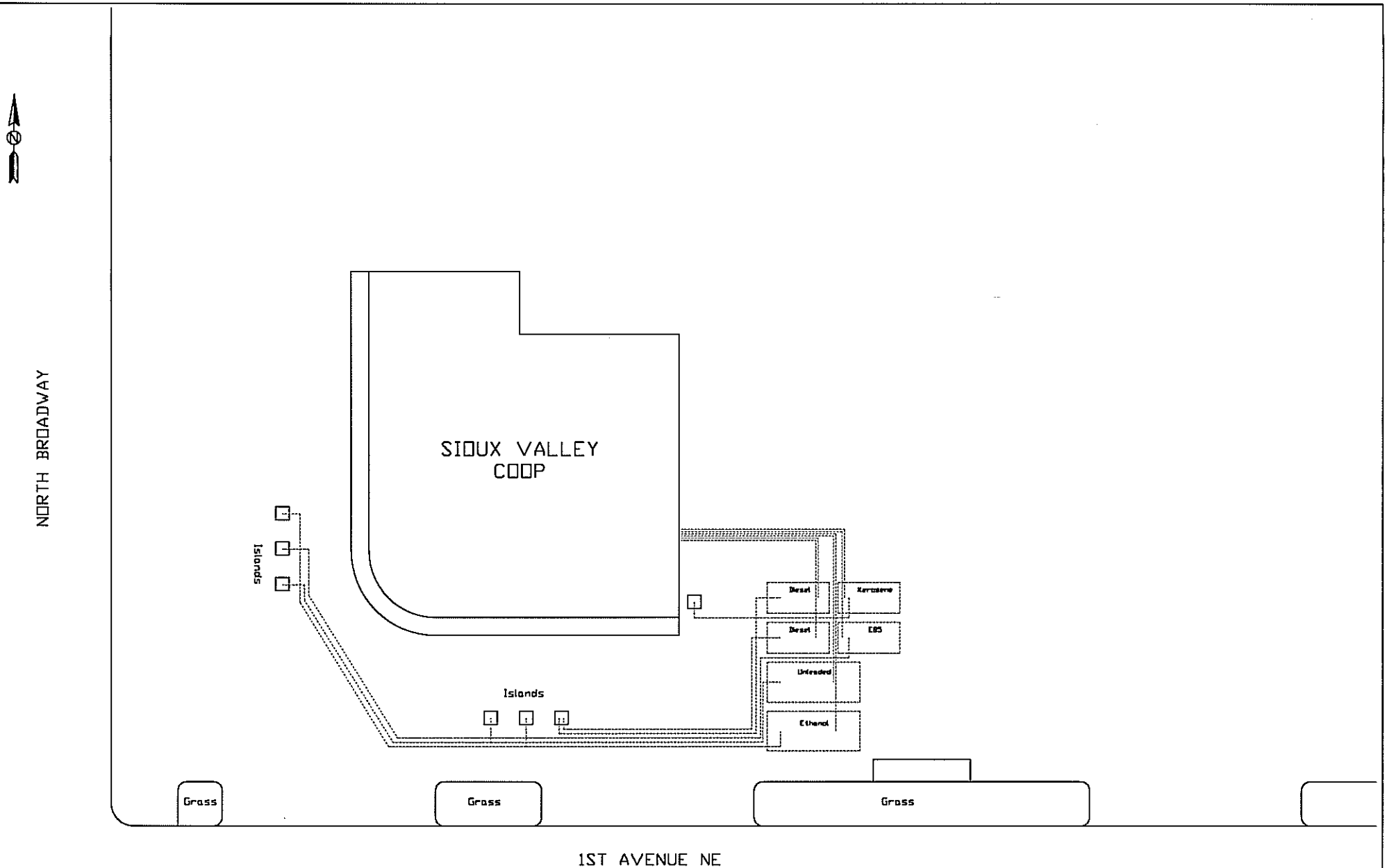
Table 2
Analytical Results for Soil Samples
Sioux Valley Coop/Ampride
Watertown, South Dakota

Sample ID	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Fuel Oil	Naphthalene
#1) WCO-Gas#1W-16'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#2) WCO-Gas#1E-16'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#3) WCO-Diesel#3-12'							< 10.0	< 0.66
#4) WCO-Diesel#4-Landfill							**8630.**	5.2
#4) WCO-Diesel#4-13'							**3990.**	< 6.6
#5) WCO-Diesel#5-12'							< 10.0	< 0.66
#6) WCO-E85#6-12'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#7) WCO-East Piping-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#8) WCO-East Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#9) WCO-West Piping-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#10) WCO-West Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#11) WCO-Ker Island-3'							60.	< 0.66
Tier 1 Action Levels	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**--**	**500.0**	**25.0**

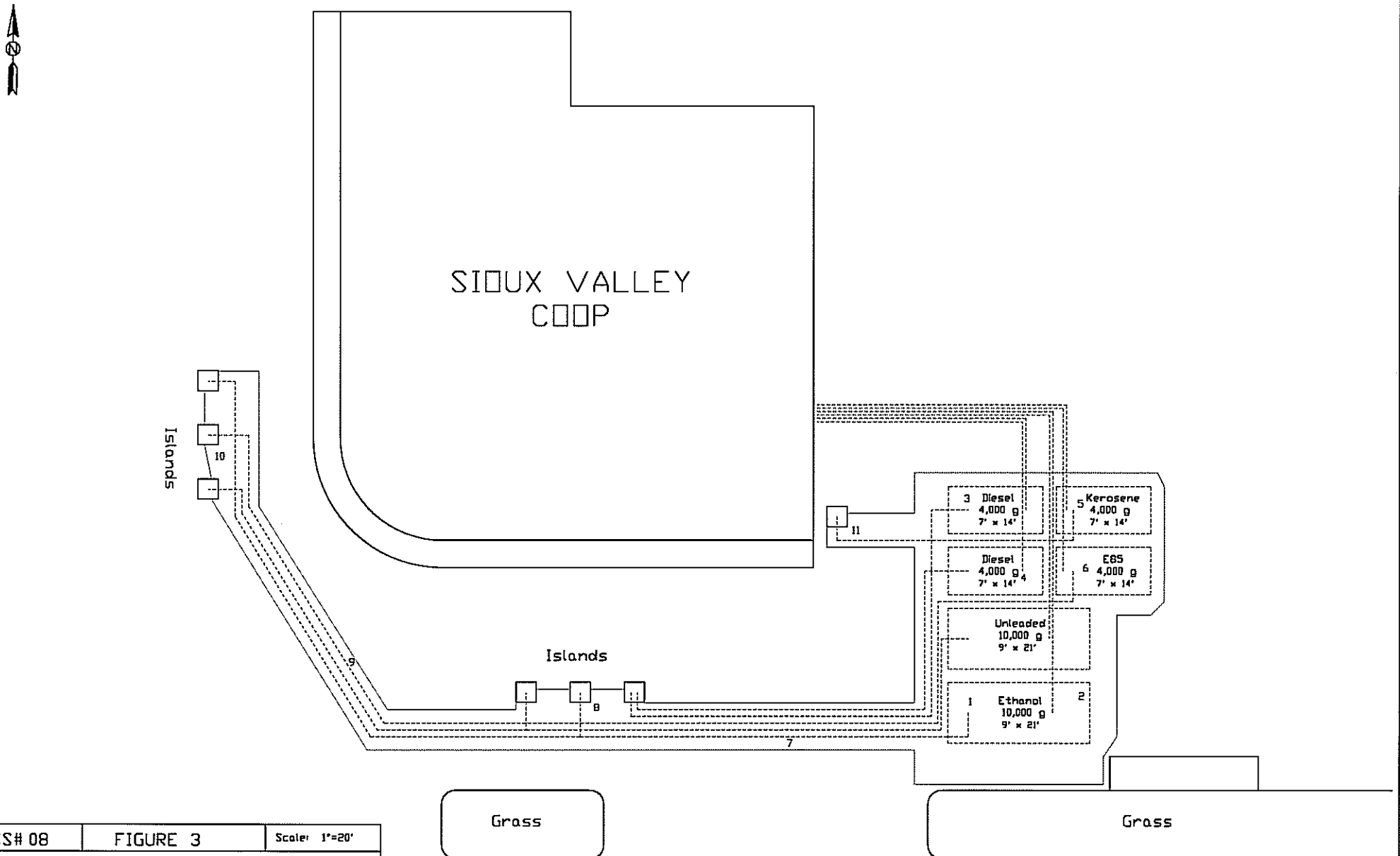
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #8	Figure 1
Topographic Site Location Map Sioux Valley Coop 1 1st Avenue NE Watertown, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



TPSS# 08	FIGURE 2	Scale: 1"=30'
Sioux Valley Coop/Ampride 1 1ST Avenue NE Watertown, South Dakota		
ATE: 02/07/05	DRAWN BY: T. Florentz SD DENR	
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



TPSS# 08	FIGURE 3	Scale: 1"=20'
Sioux Valley Coop/Ampride 1 1ST Avenue NE Watertown, South Dakota		
ATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-001
Client Sample ID: WCO-Gas #1 E-16'

Report Date: 07/06/04
Collection Date: 06/08/04 09:15
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/19/04 23:27/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 23:27/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/19/04 23:27/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/19/04 23:27/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/19/04 23:27/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/19/04 23:27/SN
Surr: Trifluorotoluene	95.0	%REC			70-130		SW8021B	06/19/04 23:27/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/19/04 23:25/SN
Surr: Trifluorotoluene	98.5	%REC			60-150		CA-LUFT	06/19/04 23:25/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-002
Client Sample ID: WCO-Gas #1 W-16'

Report Date: 07/06/04
Collection Date: 06/08/04 09:20
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:10/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:10/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:10/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:10/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:10/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:10/SN
Surr: Trifluorotoluene	95.2	%REC			70-130		SW8021B	06/20/04 02:10/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/20/04 02:08/SN
Surr: Trifluorotoluene	98.8	%REC			60-150		CA-LUFT	06/20/04 02:08/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-003
Client Sample ID: WCO-Diesel #3-12'

Report Date: 07/06/04
Collection Date: 06/08/04 11:15
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10		1	CA-LUFT	06/29/04 18:53/SN
Naphthalene	ND	mg/kg		0.66		1	CA-LUFT	06/29/04 18:53/SN
Surr: o-Terphenyl	84.8	%REC			70-130		CA-LUFT	06/29/04 18:53/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-004
Client Sample ID: WCO-Diesel #4-Landfill

Report Date: 07/06/04
Collection Date: 06/08/04 12:00
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	8630	mg/kg		200		20	CA-LUFT	06/30/04 15:24/SN
Naphthalene	5.2	mg/kg	J	13		20	CA-LUFT	06/30/04 15:24/SN
Surr: o-Terphenyl	0	%REC	D		70-130		CA-LUFT	06/30/04 15:24/SN

- D=Sample's dilution caused surrogate recovery to be outside QC advisory limits.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-005
Client Sample ID: WCO-Diesel #4-13'

Report Date: 07/06/04
Collection Date: 06/08/04 12:10
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	3990	mg/kg		100		10	CA-LUFT	06/30/04 16:05/SN
Naphthalene	ND	mg/kg		6.6		10	CA-LUFT	06/30/04 16:05/SN
Surr: o-Terphenyl	0	%REC	D		70-130		CA-LUFT	06/30/04 16:05/SN

- D=Sample's dilution caused surrogate recovery to be outside QC advisory limits.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-006
Client Sample ID: WCO-Diesel #5-12'

Report Date: 07/06/04
Collection Date: 06/08/04 14:15
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10		1	CA-LUFT	06/29/04 19:33/SN
Naphthalene	ND	mg/kg		0.66		1	CA-LUFT	06/29/04 19:33/SN
Surr: o-Terphenyl	76.3	%REC			70-130		CA-LUFT	06/29/04 19:33/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-007
Client Sample ID: WCO-E85 #6-12'

Report Date: 07/06/04
Collection Date: 06/08/04 14:25
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:42/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:42/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:42/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:42/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:42/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/20/04 02:42/SN
Surr: Trifluorotoluene	94.8	%REC			70-130		SW8021B	06/20/04 02:42/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/20/04 02:40/SN
Surr: Trifluorotoluene	99.0	%REC			60-150		CA-LUFT	06/20/04 02:40/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-008
Client Sample ID: WCO-East Piping-3'

Report Date: 07/06/04
Collection Date: 06/08/04 16:00
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:15/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:15/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:15/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:15/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:15/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:15/SN
Surr: Trifluorotoluene	95.2	%REC			70-130		SW8021B	06/20/04 03:15/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/20/04 03:13/SN
Surr: Trifluorotoluene	99.2	%REC			60-150		CA-LUFT	06/20/04 03:13/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-009
Client Sample ID: WCO-East Island-3'

Report Date: 07/06/04
Collection Date: 06/08/04 16:10
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:47/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:47/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:47/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:47/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:47/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/20/04 03:47/SN
Surr: Trifluorotoluene	95.0	%REC			70-130		SW8021B	06/20/04 03:47/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/20/04 03:45/SN
Surr: Trifluorotoluene	100	%REC			60-150		CA-LUFT	06/20/04 03:45/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-010
Client Sample ID: WCO-West Piping-3'

Report Date: 07/06/04
Collection Date: 06/08/04 16:20
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:20/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:20/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:20/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:20/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:20/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:20/SN
Surr: Trifluorotoluene	94.8	%REC			70-130		SW8021B	06/20/04 04:20/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/20/04 04:18/SN
Surr: Trifluorotoluene	99.5	%REC			60-150		CA-LUFT	06/20/04 04:18/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-011
Client Sample ID: WCO-West Island-3'

Report Date: 07/06/04
Collection Date: 06/08/04 16:30
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:52/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:52/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:52/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:52/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:52/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/20/04 04:52/SN
Surr: Trifluorotoluene	95.2	%REC			70-130		SW8021B	06/20/04 04:52/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/20/04 04:50/SN
Surr: Trifluorotoluene	99.8	%REC			60-150		CA-LUFT	06/20/04 04:50/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Northeast Tank Pathology
Lab ID: R04060233-012
Client Sample ID: WCO-KER Island-3'

Report Date: 07/06/04
Collection Date: 06/08/04 19:00
Date Received: 06/15/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	60	mg/kg		10		1	CA-LUFT	06/30/04 00:49/SN
Naphthalene	ND	mg/kg		0.66		1	CA-LUFT	06/30/04 00:49/SN
Surr: o-Terphenyl	96.0	%REC			70-130		CA-LUFT	06/30/04 00:49/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

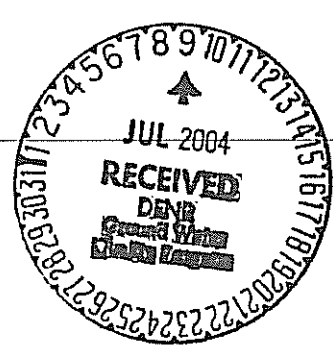
ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

QA/QC Summary Report

Client: SD DENR
Project: Northeast Tank Pathology

Report Date: 07/06/04
Work Order: R04060233

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2309
Sample ID: MB-2309	Method Blank								06/19/04 17:58
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	107	60	150			
Sample ID: LCSG-2309	Laboratory Control Sample - generic								06/19/04 19:03
TPH as Gasoline	260	mg/kg	10	128	60	140			
Surr: Trifluorotoluene			0.40	103	50	200			
Sample ID: R04060233-001AMS	Sample Matrix Spike								06/19/04 23:58
TPH as Gasoline	260	mg/kg	10	132	60	140			
Surr: Trifluorotoluene			0.40	96.5	60	150			
Method: CA-LUFT									Batch: 2312
Sample ID: MB-2312	Method Blank								06/29/04 14:10
TPH as Fuel Oil	ND	mg/kg	10						
Naphthalene	ND	mg/kg	0.66						
Surr: o-Terphenyl			0.33	95.8	70	130			
Sample ID: LCS-2312	Laboratory Control Sample - generic								06/29/04 14:51
TPH as Fuel Oil	480	mg/kg	10	96	75	125			
Surr: o-Terphenyl			0.33	92.2	70	130			
Sample ID: LCSD-2312	Laboratory Control Sample Duplicate								06/29/04 15:31
TPH as Fuel Oil	401	mg/kg	10	80.2	75	125	18	20	
Surr: o-Terphenyl			0.33	88.5	70	130			
Sample ID: R04060279-001AMS	Sample Matrix Spike								06/29/04 20:53
TPH as Fuel Oil	466	mg/kg	10	93.2	75	125			
Surr: o-Terphenyl			0.33	92.7	70	130			
Sample ID: R04060279-001AMSD	Sample Matrix Spike Duplicate								06/29/04 21:32
TPH as Fuel Oil	393	mg/kg	10	78.6	75	125	17	20	
Surr: o-Terphenyl			0.33	81.6	70	130			
Method: CA-LUFT									Analytical Run: GCPID1-R_040619A
Sample ID: CCV_0619hp402r-S	Continuing Calibration Verification Standard								06/19/04 16:02
TPH as Gasoline	22	mg/kg	10	110	75	125			
Surr: Trifluorotoluene			0.40	101	50	150			



Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: Northeast Tank Pathology

Report Date: 07/06/04
Work Order: R04060233

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: 2309
Sample ID: MB-2309	Method Blank								06/19/04 18:00
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	106	70	130			
Sample ID: LCSB-2309	Laboratory Control Sample - generic								06/19/04 18:32
Methyl tert-butyl ether (MTBE)	7.5	mg/kg	0.20	83.3	60	130			
Benzene	8.0	mg/kg	0.20	89	60	130			
Toluene	8.2	mg/kg	0.20	91.2	60	130			
Ethylbenzene	8.0	mg/kg	0.20	88.7	60	130			
Naphthalene	5.5	mg/kg	0.20	61.6	60	130			
Xylenes, Total	24	mg/kg	0.20	88.7	60	130			
Surr: Trifluorotoluene			0.20	97	60	130			
Sample ID: R04060233-001AMS	Sample Matrix Spike								06/20/04 01:05
Methyl tert-butyl ether (MTBE)	6.0	mg/kg	0.20	66.1	50	130			
Benzene	6.6	mg/kg	0.20	73.9	50	130			
Toluene	6.9	mg/kg	0.20	76.2	50	130			
Ethylbenzene	6.7	mg/kg	0.20	74.1	50	130			
Naphthalene	3.6	mg/kg	0.20	40.1	50	130			S
Xylenes, Total	20	mg/kg	0.20	74.9	50	130			
Surr: Trifluorotoluene			0.20	96.5	50	130			
Method: SW8021B									Analytical Run: GCPID1-R_040619A
Sample ID: CCV_0619hp401r-S	Continuing Calibration Verification Standard								06/19/04 15:32
m+p-Xylenes	19	mg/kg	0.20	95	85	115			
o-Xylene	10	mg/kg	0.20	100	85	115			
Methyl tert-butyl ether (MTBE)	9.5	mg/kg	0.20	94.8	85	115			
Benzene	10	mg/kg	0.20	100	85	115			
Toluene	10	mg/kg	0.20	100	85	115			
Ethylbenzene	10	mg/kg	0.20	100	85	115			
Naphthalene	7.6	mg/kg	0.20	75.6	85	115			S
Surr: Trifluorotoluene			0.20	100	85	115			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

South Dakota Department of Environment and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

523 East Capitol

CHAIN OF CUSTODY RECORD

PROJ. NO. TANK PATHOLOGY

PROJECT NAME: Northeast TANK Pathology

SAMPLERS: (Signature)

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BTEX, TPH as Gasoline	TPH as diesel	TPH as Kerosene	REMARKS
0600233-001	6/8/04	9:15			WCO - Gas #1 E - 16'	1	X			
002	6/8/04	9:20			WCO - Gas #1 W - 16'	1	X			
003	6/8/04	11:15			WCO - Diesel #3 - 12'	1		X		
004	6/8/04	12:00			WCO - Diesel #4 - Landfill	1		X		
005	6/8/04	12:10			WCO - Diesel #4 - 13'	1		X		
006	6/8/04	2:15			WCO - Diesel #5 - 12'	1		X		
007	6/8/04	2:25			WCO - E85 #6 - 12'	1	X			
008	6/8/04	4:00			WCO - East Piping - 3'	1	X			
009	6/8/04	4:10			WCO - East Island - 3'	1	X			
010	6/8/04	4:20			WCO - West Piping - 3'	1	X			
011	6/8/04	4:30			WCO - West Island - 3'	1	X			
012	6/8/04	7:00p			WCO - KER Island - 3'	1			X	

JUL 2004 RECEIVED DENR

8.2

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time: 6-15-04 15:00	Remarks:	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples ☐ Accepted ☐ Declined _____ Signature

SD—

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	9	Contact :	Ken Wede
Site Name:	Madison Coastal Mart	Address :	123 2nd St NW
Address:	202 NW 2nd St	City :	Madison
City :	Madison	Phone :	(605)256-6870
County :	Lake		

Legal Description of Property: Lots 12, 13, & 14, except the east 14.00 feet of Lot 12, Block 3, Town Proprietor's First Addition to the City of Madison.

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☐	Documentation of storage system installations, replacements, and upgrades.	☐	☒	☒
☐	Dates of upgrades or replacement of the storage tank systems.	☐	☒	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☒	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☒	Repair, operation, and maintenance records.	☐	☒	☐
☐	Storage tank fuel inventory, including tank water level.	☐	☐	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	3	4,000 gallon				
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Unknown
Tank Installation Date:	approx 1961; lined in 1988/1992
Tank Installer Name:	unknown; lining done by Rockey's

Piping Manufacturer Name:	Ameron
Piping Installation Date:	1998 est.
Piping Installer Name:	Unknown
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :B & H Petroleum	Phone Number: (507) 381-4507
Name of Person(s) Performing Test: Sreve Schwartzenbach	Tester Certification Number and Expiration Date: #MNB010211204R 11-12-04
Manufacturer of Test Equipment / Model or Version: Petro-Tite Line Tester	
Equipment Threshold, GPH: .05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: May 27, 04	

				Pressure Test														Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	50	2"/160'															P	1130	50	1200	
2	50	2"/150'																1215	50	1245	p
3	50	2"/140'																1310	50	1340	p
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☒	Internal Lining	☐	Unknown
☒	Unprotected Steel	☒	Single Wall		
☐	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other gravel				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other gravel	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☒	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☐	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☒	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☒	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 06 / 02 / 2004 month/day/year
Estimated number of gallons discharged: Unknown

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☒	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☒	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☒	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☒ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☒	Other: (unknown)	☐	Other:

Explanation:

Precision line tightness tests and helium tests found the lines to be tight. However soils below the tank were found to be contaminated. Release source remains unknown.

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☒	Unknown
				☐	Other

Explanation:

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☒	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

The three 4,000 gallon USTs had been installed a this site for 43 years. The tanks appeared to be unprotected steel. Two tanks were lined in 1988. A spill was reported at this site in 1989 when a vehicle damaged a dispenser and the third tank was lined in 1992. No records were available to indicate when the lines were installed. But as the lines removed were rigid fiberglass and the flex connectors were cathodically protected it is assumed the lines were replaced in conjunction with lining of the tanks.

The station operated until January 15, 2004 when it was sold, resold and the decision made to operate the location as a used car lot. Consequently, little information was available at the site. As-built drawings were not available nor were operating or maintenance manuals. Certificates for tank lining were available as were the results of a visual inspection of the lining that was done in 1998. Paperwork indicated SIR had been used in the past for inventory control.

The following conditions were noted. A vapor bleed line on one of the submersible pumps was disconnected. Both the male and female connections of this line were capped with plastic plugs suggesting the line had not functioned for a considerable period of time. When exposed the tanks were found to be severely corroded. Some areas of the tank had corroded completely and the liner showed through to the outside.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Coastal Mart

Street Address: 202 NW 2nd Ave City: Madison

Owner: Ken Wede Phone #: 605-256-6463

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	4,000	Gasoline	Bad -- holes
2	4,000	Gasoline	Bad -- holes
3	4,000	Gasoline	Bad -- holes

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 148'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 2 Number of islands removed: 2

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes X No ____ If yes, at what depth? 19

Was free product encountered in the excavation? Yes ____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 130 Loose cubic yards of fill used: 214

The tank basin was backfilled with sand.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin consisted of sand and gravel. The southwest corner of the overexcavated basin contained cobbles and boulders and some fine silt. There was also an old cistern in this area. The rest of the tank basin was made up of gravel and sand. Visually impacted soils were encountered from the bottom of the tanks(8 ½') and extended beyond the general depth of the excavation of 18 feet. Groundwater was encountered at 19 feet. The holes in the tank allowed a visual of the tank's interior liner. The contamination indicates that holes were in the tank prior to lining.

A good representative sample from under the middle tank north end was not obtained due to sloughing.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

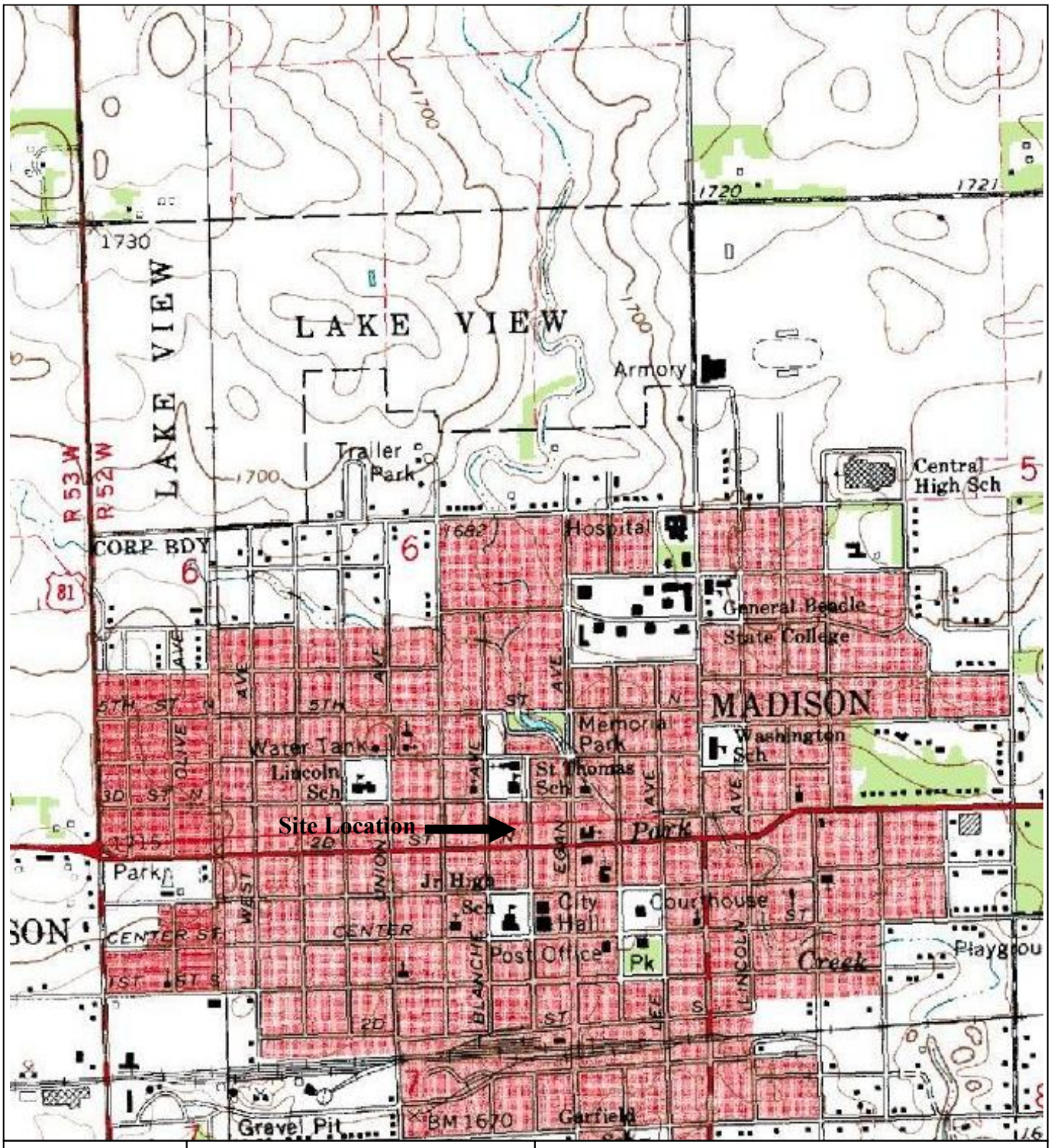
Table 1
PID Readings for Selected Soil Samples
Coastal Mart
Madison, South Dakota

Sample ID	Location	Depth (ft)	PID
PS1 piping sample 1	5' East of NE Corner of Building	3	ND
PS2	East of South Island	3	ND
NIS1 north island sample 1	Under Middle of Island	3	ND
SIS2	Under Middle of Island	3	ND
WTNS1	West Tank North End Sample One	10	ND
WTSS2		11	200
MTNS3		18	200
MTSS4		11	300
ETNS5		18	200
ETSS6		18	100

Table 2
Analytical Results for Soil Samples
Coastal Mart
Madison, South Dakota

Sample ID	Depth in feet	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	TPH as Fuel Oil	Naphthalene
PS1	3	<.20	<.20	<.20	<.20	<10.0		
PS2	3	<.20	<.20	<.20	<.20	<10.0		
NIS1	3	<.20	<.20	<.20	<.20	<10.0		
SIS2	2.5	<.20	<.20	<.20	<.20	<10.0		
WTNS1	11.5	<.20	<.20	<.20	<.20	<10.0		
WTSS2	11.5	**3.5**	**36.1**	9.68	66.6	399.0		
MTNS3	18	**.58**	**25.8**	**15.0**	99.8	**584.0**		
MTSS4	11	**.56**	9.21	9.64	99.8	**873.0**		
ETNS5	18	<.20	<.20	<.20	<.20	<10.0		
ETSS6	18	<.20	<.20	<.20	<.20	<10.0		
Tier 1 Action Levels		**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

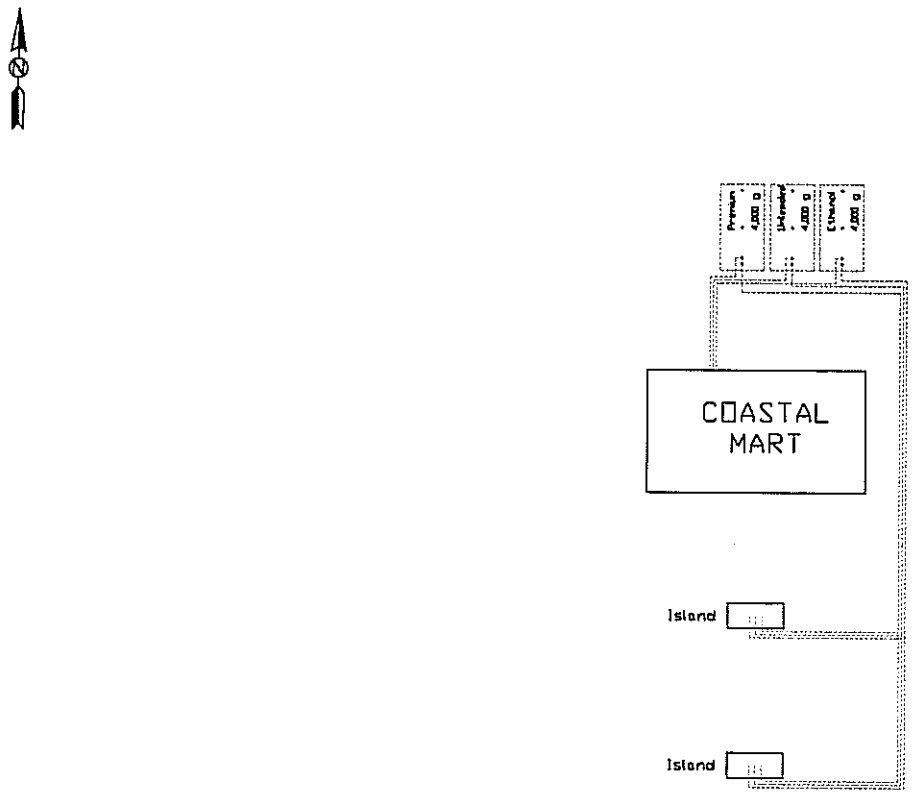
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #9	Figure 1

Topographic Site Location Map
Coastal Mart
202 N.W. 2nd Street
Madison, SD

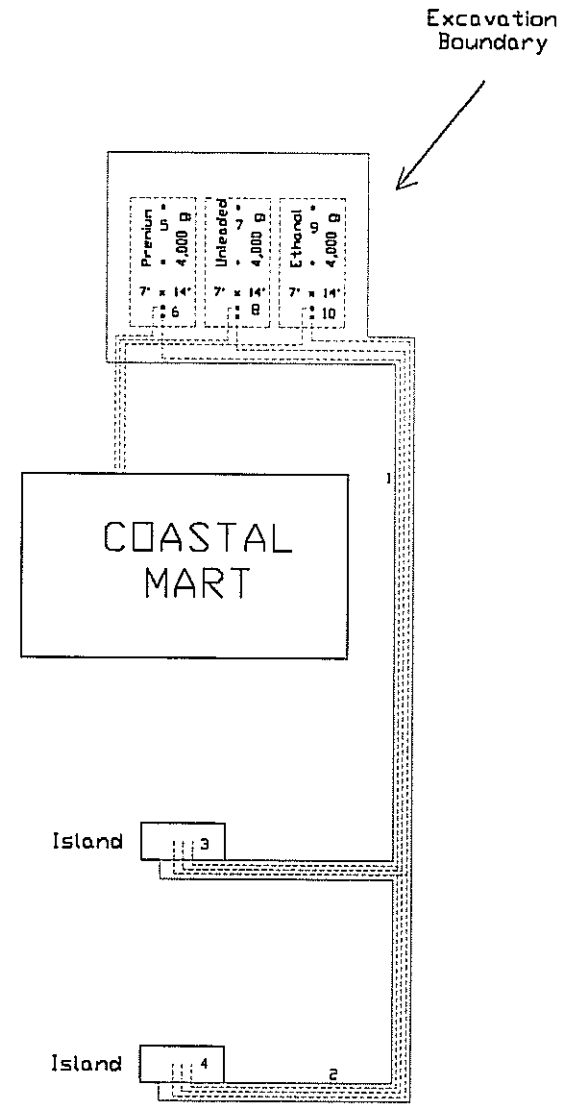
SD Petroleum Release Compensation Fund
Tank Pathology Study



VAN EPS AVENUE

NW 2ND STREET

PSS# 09	FIGURE 2	Scale: 1"=30'
Coastal Mart 202 NW 2ND Street Madison, South Dakota		
02/07/05	DRAWN BY: T. Florentz SD DENR	
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 09	FIGURE 3	Scale: 1"=20'
Coastal Mart 202 NW 2ND Street Madison, South Dakota		
02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-475-3

PROJECT:
COASTAL MART INC #1825
MADISON, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18379

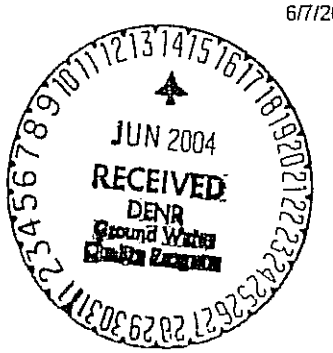
DATE: June 08, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 02 , 2004
DATE RECEIVED: June 03, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
PS1	1780-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
PS2	1781-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
NIS1	1782-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg



REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-475-3

CHAIN OF CUSTODY # 18379

PROJECT:
COASTAL MART INC #1825
MADISON, SD

DATE: June 08, 2004

SAMPLE MEDIUM: SOIL

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501

PHONE:

DATE SAMPLED: June 02 , 2004
DATE RECEIVED: June 03, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
SIS1	1783-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
WTNS1	1784-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
WTSS2	1785-04					
	6/7/2004	EPA 8020	Benzene	3.50	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	36.10	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	9.68	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	66.60	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	399.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-475-3

CHAIN OF CUSTODY # 18379

PROJECT:
COASTAL MART INC #1825
MADISON, SD

DATE: June 08, 2004

SAMPLE MEDIUM: SOIL

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

DATE SAMPLED: June 02 , 2004
DATE RECEIVED: June 03, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
MTNS3	1786-04					
	6/7/2004	EPA 8020	Benzene	0.58	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	25.80	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	15.00	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	99.80	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	684.00	mg/kg	10 mg/kg
MTSS4	1787-04					
	6/3/2004	EPA 8020	Benzene	0.56	mg/kg	0.2 mg/kg
	6/3/2004	EPA 8020	Toluene	9.21	mg/kg	0.2 mg/kg
	6/3/2004	EPA 8020	Ethylbenzene	9.64	mg/kg	0.2 mg/kg
	6/3/2004	EPA 8020	Xylenes	99.80	mg/kg	0.2 mg/kg
	6/3/2004	California USGS	TPH as Gasoline	873.00	mg/kg	10 mg/kg
ETNS5	1788-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-475-3

PROJECT:
COASTAL MART INC #1825
MADISON, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18379

DATE: June 08, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 02 , 2004
DATE RECEIVED: June 03, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
ETSS6	1769-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

1 of 2

SN: 18379

GEOTEK ENGINEERING & TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, SD 57104
Telephone (605) 335-5512 • Fax (605) 335-0773

CHAIN OF CUSTODY RECOR
Analytical Request

LAB: _____

GEOTEK PROJECT NAME Coastal Mart, Inc #1825

Address 202 NW 2nd Madison, SD 57042

Geotek Project # 04-475-3

Geotek Project Manager _____

P.O. #/Billing Reference Terry Florentz, DENR-GWQ

Bill To 523 E Capitol, Pierre, SD 57501-3182

TRANSMITTAL OF RESULTS

Report To Terry Florentz

Fax? _____

Express Mail? _____

Standard Mail? ✓

Sampled by (PRINT) Scott Bickler Phone# 362-3500

Sampler Signature Scott Bickler Date Sampled 6-2-04

ANALYSIS REQUESTED

Sample No.	Sample Description	Sample Type	No. of Contain.	PID Reading	LABORATORY METHODS (State Regulatory Agency)	BTEX	TH as Gasoline	Naphthalene	TH as Fuel Oil/Diesel	TH as Waste Oil	Benzene Toluene	MTBE	n-Hexane		Speed of Analysis No. days if other than standard turnaround	Remarks
PS1	5'E of NE bldg corner 3'bg	soil	1	ND	1780	✓	✓									all are visually
PS2	E of South island 3'bg			ND	1781	✓	✓									impacted, sandy to
NIS1	north island 3'bg			ND	1782	✓	✓									silty soils, one
SIS2	south island 3'bg			ND	1783	✓	✓									fine silts
WTNS1	west tank north end 10'bg			ND	1784	✓	✓									
WTSS2	west tank south end 11'bg			200	1785	✓	✓									
MTNS3	middle tank north end 18'bg			200	1786	✓	✓									
MTSS4	middle tank south end 11'bg			300	1787	✓	✓									
ETNS5	east tank north end 18'bg			200	1788	✓	✓									rush

JUN 2004 RECEIVED DENR Ground Water Quality Program

Relinquished by Sampler: (Signature)	DATE/TIME	Received by Shipper: (Signature)	DATE/TIME	Method of Shipment:
Scott Bickler				
Delivered by Shipper: (Signature)	**DATE/TIME**	**Received by Laboratory: (Signature)**	**DATE/TIME**	
		[signature]	6-3-04 8:35	

LABORATORY: Was cooler received with Chain of Custody Seal intact? ___ Yes ___ No Initials _____

Fax results to Scott Bickler 362-~~3500~~ (results faxed 6-8-04)

Form 13682

SN: 18382

2 of 2

GEOTEK ENGINEERING & TESTING SERVICES, INC.

909 East 50th Street North
Sioux Falls, SD 57104
Telephone (605) 335-5512 • Fax (605) 335-0773

CHAIN OF CUSTODY RECORD

Analytical Request

LAB: _____

GEOTEK PROJECT NAME Coastal Mart, Inc #1825 Geotek Project # 04-475-3

Address 202 NW 2nd Madison SD 57042

Geotek Project Manager _____

P.O. #/Billing Reference _____

Bill To Terry Florent ZDENR-GWQ 523 E Capitol, Pierre, SD 57501-3182

TRANSMITTAL OF RESULTS

Report To Terry Florente

Fax? _____

Express Mail? _____

Standard Mail? ✓

Sampled by (PRINT) Scott Bickler Phone# 362-3500

Sampler Signature Scott Bickler Date Sampled 6-

ANALYSIS REQUESTED

Sample No.	Sample Description	Sample Type	No. of Contain.	PID Reading	LABORATORY METHODS (State Regulatory Agency)	BTEX	TH as Gasoline	Naphthalene	TH as Fuel Oil/Diesel	TH as Waste Oil	Benzene Toluene	MTBE	Methane n-Hexane	Speed of Analysis No. days if other than standard turnaround	Remarks
ETSS6	East tank southwest 6"	Soil	1	100	1789	X	X								

RECEIVED JUN 2004 DENR Ground Water Quality Program

Relinquished by Sampler: (Signature)	DATE/TIME	Received by Shipper: (Signature)	DATE/TIME	Method of Shipment:
Scott Bickler				
Delivered by Shipper: (Signature)	DATE/TIME	Received by Laboratory: (Signature)	DATE/TIME	
			6-3-04 8:35	

LABORATORY: Was cooler received with Chain of Custody Seal intact? ___ Yes ___ No Initials _____

Fax results to Scott Bickler 362 2768

Form 1368

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	**10**	Contact :	Craig Smith
Site Name:	Northview Bait & Tackle	Address :	5416 W. 60th St North
Address:	5402 W. 60th St North	City :	Sioux Falls
City :	Sioux Falls	Phone :	(605) 367-5680
County :	Minnehaha		

Legal Description of Property: The south 300 feet of the East 300 feet of the South half of the South east quarter (S1/2 SE1/4) of Section 26, Township 102 North, Range 50 West, Minnehaha County, South Dakota.

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☐	☒	☒
☒	Dates of upgrades or replacement of the storage tank systems.	☒	☐	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☐	Storage tank fuel inventory, including tank water level.	☐	☐	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	1	6,000 gallon	1	10,000 gallon		
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Fluid Containments
Tank Installation Date:	Apr 1999
Tank Installer Name:	Dockendorf Equipment

Piping Manufacturer Name:	Environ Coaxial
Piping Installation Date:	Apr 1999
Piping Installer Name:	Dockendorf Equipment

Notes

LINE TIGHTNESS TEST REPORT FORM

Testing Company :B & H Petroleum	Phone Number: (507)
Name of Person(s) Performing Test: Dan Halbmeier	Tester Certification Number and Expiration Date: #MNB010111204R, 11-12-04
Manufacturer of Test Equipment / Model or Version: Petro-Tite Line Tester	
Equipment Threshold, GPH: .05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: May 25, 04	

				Pressure Test														Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1		1.5"/60'															P	1615	50	1630	P
2		1.5"/40'															P	1640	50	1700	P
3																					
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Spill Containment Bucket
☒	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☐	Single Wall		
☐	Steel w/ external coating	☒	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☐	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☒	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☒	Pea Rock				
☐	Other				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Dispenser Sump(s)
☐	Fiberglass	☐	Impressed Current System	☐	No Dispenser Sumps
☐	Composite	☐	Single Wall	☐	Unknown
☐	Unprotected Steel	☒	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☒	Piping Sump(s)
☒	Flexible Synthetic	☒	Secondary Containment w/ Rock Guard	☐	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☒	Pea Rock	☐	Bulk Product		
☐	Other	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☒	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☒	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge:	/ / month/day/year
Estimated number of gallons discharged:	

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☐	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

***If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This had been a gasoline station for longer than 25 years. An earlier version of tanks were removed in 1999 and upgraded to these tanks. Contamination was found when the earlier tanks were removed. This newer version of tanks (one -10,000 and one 6,000 gallon) were no longer required when the property was sold to the owner of surrounding land (State of South Dakota Regional DOT Headquarters). The station ceased operation in Feb 2002 and the site was studied in May 2004.

Most of desired documentation was not available. No as-built drawings, operation, or maintenance manuals were received. Inventory and system leak checks were not received.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Northview Campers Bait & Tackle

Street Address: RR4 Box 13 City: Sioux Falls

Owner: Craig Smith Phone #: 367-5680

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	10,000	Gasoline	Good
2	6,000	Gasoline	Good

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 70'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 2 Number of islands removed: 2

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No x If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 0 Loose cubic yards of fill used: 112

The tank basin was back filled with sand.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The native soils consist of silty clay.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

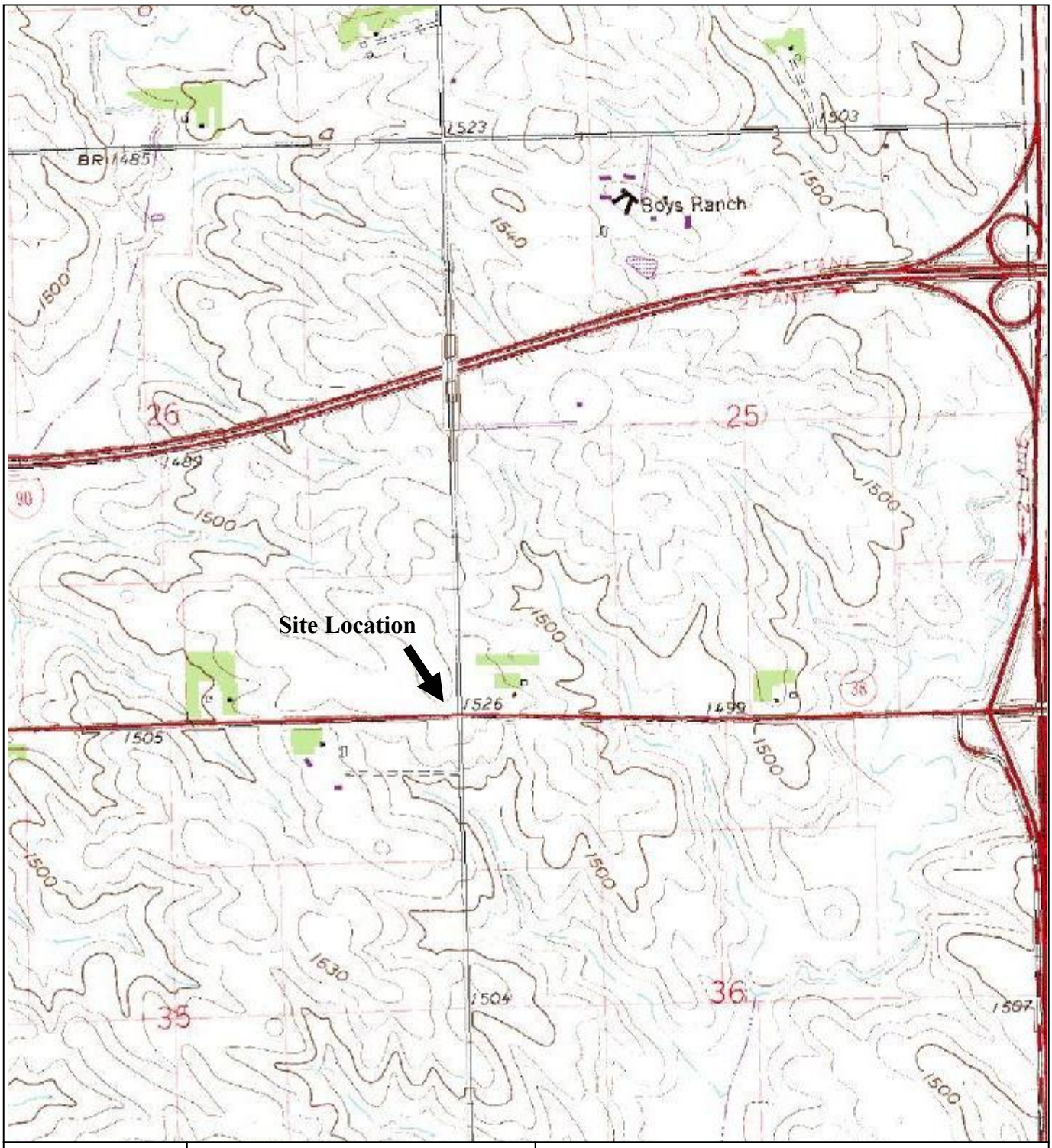
Table 1
PID Readings for Selected Soil Samples
Northview Campers Bait & Tackle
Sioux Falls, South Dakota

Sample ID	Location	Depth (ft)	PID
NIS1	North ISLAND SAMPLE ONE	3	ND
SIS2		3	ND
ETES1	East Tank East End Sample One	18.5	ND
ETWS2		18.5	ND
WTES3		18.5	ND
WTMS4		18.5	ND
WTWS5		18.5	ND

Table 2
Analytical Results for Soil Samples
Northview Campers Bait & Tackle
Sioux Falls, South Dakota

Sample ID	Depth in Feet	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	TPH as Diesel	Naphthalene
NIS1	3	<.20	<.20	<.20	<.20	<10.0		
SIS2	3	<.20	<.20	<.20	<.20	<10.0		
ETES1	18.5	<.20	<.20	<.20	<.20	<10.0		
ETWS2	18.5	<.20	<.20	<.20	<.20	<10.0		
WTES3	18.5	<.20	<.20	<.20	<.20	<10.0		
WTMS4	18.5	<.20	<.20	<.20	<.20	<10.0		
WTWS5	18.5	<.20	<.20	<.20	<.20	<10.0		
Tier 1 Action Levels	--	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

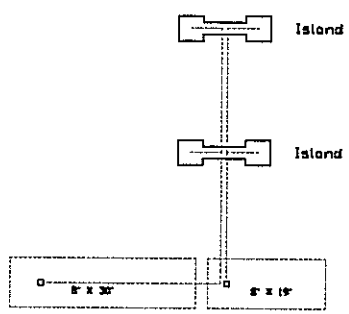
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #10	Figure 1
Topographic Site Location Map Northview Bait & Tackle 5402 W. 60th Street Sioux Falls, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**

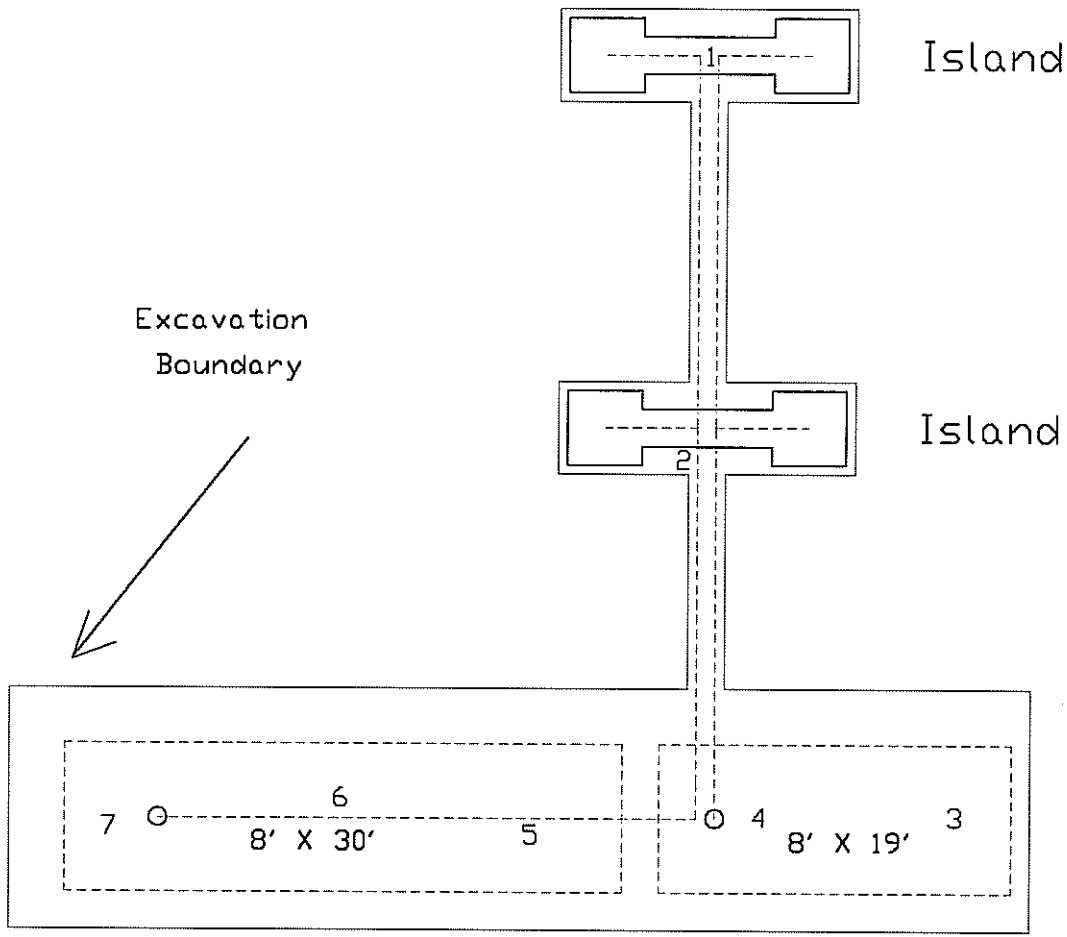
NORTHVIEW
BAIT & TACKLE

NORTH MARION ROAD



50TH STREET NORTH

PSS# 10	FIGURE 2	Scale: 1"=30'
Northview Bait & Tackle 5402 West 60TH Street North Sioux Falls, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 10	FIGURE 3	Scale: 1"=10'
Northview Bait & Tackle 5402 West 60TH Street North Sioux Falls, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-487-3

CHAIN OF CUSTODY # 18380

PROJECT:
NORTHVIEW CAMPERS BAIT & TACKLE
SIOUX FALLS, SD

DATE: June 08, 2004

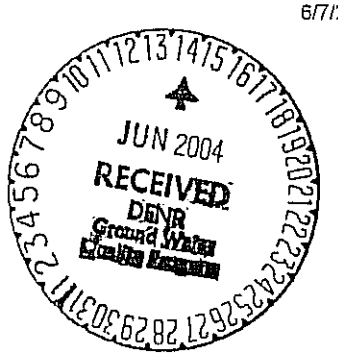
SAMPLE MEDIUM: SOIL

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

DATE SAMPLED: June 04 , 2004
DATE RECEIVED: June 04, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
NIS1	1792-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
SIS2	1793-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
ETES1	1794-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg



REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-487-3

PROJECT:
NORTHVIEW CAMPERS BAIT & TACKLE
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18380

DATE: June 08, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 04 , 2004
DATE RECEIVED: June 04, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
ETWS2	1795-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
WTES3	1796-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
WTMS4	1797-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-487-3

PROJECT:
NORTHVIEW CAMPERS BAIT & TACKLE
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # 18380

DATE: June 08, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 04 , 2004
DATE RECEIVED: June 04, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
WTWS5	1798-04					
	6/7/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

SN: 18380

GEOTEK ENGINEERING & TESTING SERVICES, INC.

909 East 50th Street North
Sioux Falls, SD 57104
Telephone (605) 335-5512 • Fax (605) 335-0773

CHAIN OF CUSTODY RECORD
Analytical Request

LAB: _____

Scott & Tackle

GEOTEK PROJECT NAME Northview Campers ~~#4~~ — Geotek Project # 04-487-3

Address RR 4 Box 13 — Geotek Project Manager _____

Sioux Falls, SD 57107 — P.O. #/Billing Reference Terry Florentz, DENR

Bill To GWA, 523 E Capitol, Pierre, SD 57501-3182

TRANSMITTAL OF RESULTS

Report To Terry Florentz

Fax? _____

Express Mail? _____

Standard Mail? ✓

Sampled by (PRINT) Scott Bickler — Phone# 362-3500

Sampler Signature Scott Bickler — Date Sampled 6-04-04

ANALYSIS REQUESTED

Sample No.	Sample Description	Sample Type	No. of Contain.	PID Reading	LABORATORY METHODS (State Regulatory Agency)	BTEX	TH as Gasoline	Naphthalene	TH as Fuel Oil/Diesel	TH as Waste Oil	Benzene Toluene	MTBE	Dethane	n-Hexane	Speed of Analysis No. days if other than standard turnaround	Remarks
NIS1	North island	soil	1	ND		X	X								1792	very clean
SIS2	South island	↓	↓	↓		X	X								1793	soils
ETES1	East tank eastend					X	X								1794	
ETWS2	east tank middle					X	X								1795	
WTES3	west tank east end					X	X								1796	
WTMS4	west tank middle					X	X								1797	
WTWS5	west tank west end					X	X								1798	

JUN 2004 RECEIVED DENR Ground Water Quality Program

Relinquished by Sampler: *(Signature)* Scott Bickler	DATE/TIME 6-4-04 11:42	Received by Shipper: *(Signature)*	DATE/TIME	Method of Shipment:
Delivered by Shipper: *(Signature)*	DATE/TIME	Received by Laboratory: *(Signature)*	DATE/TIME 6-4-04 11:45	

LABORATORY: Was cooler received with Chain of Custody Seal intact? ___ Yes ___ No Initials _____

Fax all results to Scott Bickler
362-2768 (results faxed 6-4-04)

Form 1368

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	11	Contact :	Larry Feldsein
Site Name:	12th Street Sinclair	Address :	1001 E. Cliff Road
Address:	1417 W. 12th Street	City :	Burnsville MN 55337
City :	Sioux Falls	Phone :	(952) 736-1100
County :	Minnehaha		

Legal Description of Property: Lots 5 through 8, Block 4, of Tufts Subdivision, of Emersons Addition, City of Sioux Falls.

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☐	☒	☐
☒	Dates of upgrades or replacement of the storage tank systems.	☐	☒	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☐	☒	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☒

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	3	8,000 gallon				
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Huron Culvert And Tank
Tank Installation Date:	Jan 1992
Tank Installer Name:	Sioux Equipment

Piping Manufacturer Name:	Ameron (3000L)
Piping Installation Date:	1992? (Tank installation form indicates the lines are galvanized steel)
Piping Installer Name:	Sioux Equipment
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :B & H Petroleum	Phone Number: (507) 381-4507
Name of Person(s) Performing Test: Dan Halbmaier	Tester Certification Number and Expiration Date: MNB010111204R 11-12-04
Manufacturer of Test Equipment / Model or Version: Petro-Tite Line Tester	
Equipment Threshold, GPH: .05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: May 26, 04	

				Pressure Test														Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1		2"/120'	1000													1101	F	1400		1430	F
2	60	2"/120'	1000	.48		-.00		.004		-.00		-.00		0	.007	1115	P	1445		1530	F
3	50	2"/120'	1015	.030		.003		-.00		.001		0			-.00	1115	P	1600	50	1640	F
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☐	Single Wall		
☒	Steel w/ external coating	☒	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other washed sand				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☐	Single Wall	☐	Unknown
☐	Unprotected Steel	☒	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☒	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☐	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other gravel & sand mix	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☒	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☒	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 07 / 08 / 2004 month/day/year
Estimated number of gallons discharged: Unknown

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☒	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☒	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☒	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☒ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes? Mechanical Line Leak Detector

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☒	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:

Explanation:

The piping is 3" over 2" fiberglass with any leaks from the interstitial to return to the tank/fill sump. No sensors were contained in the sump that would identify increasing levels of product. Additionally, some portions of the line were lower than the sump outlets. Some lines and secondary containment lines were unable to be tested because they were not tight and seals/joints had broken loose.

Cause of the Discharge

☒	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☒	Material Incompatibility
☒	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☒	Unknown
				☐	Other

Explanation:

Some secondary lines had Ameron piping and A.O. Smith fittings. These were often loose when raised from the soil. Similarly, some secondary piping had been epoxyed to steel standpipes. These also were loose. Tank containment tubs were joined to secondary piping, underground, with rubber boots. Some of these rubber boots had become malformed, probably by contact with product.

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☒	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This had been a service station for approximately 50 years. The tanks were replaced in 1989 and when not used for a period of time, required by the fire department to be replaced again in 1992. The tanks studied were three 8,000 gallon tanks. This location stopped selling gasoline in 2002 and applied for the pathology study in 2004.

As-built drawings were not available nor were operation and maintenance manuals.

Monthly ATG results were provided however, maintenance and tightness test results were not.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Sinclair Retail

Street Address: 1417 West 12th St City: Sioux Falls

Owner: Larry Feldsien Phone #: 952-736-1100

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	8,000	Gasoline	Good
2	8,000	Gasoline	Good
3	8,000	Gasoline	Good

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 99'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 3 Number of islands removed: 3

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No X If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 29 Loose cubic yards of fill used: 197

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin consisted of sand. Clay was encountered at 13 feet below grade in the tank basin. The island areas and a piping elbow joint were areas of contamination. The cause of this contamination appeared to be due to a bad installation. For example, loose joints and fittings. The island north of the building was over excavated vertically to 11 feet and pid readings were still elevated. At 7 feet in this island area native clays were encountered.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

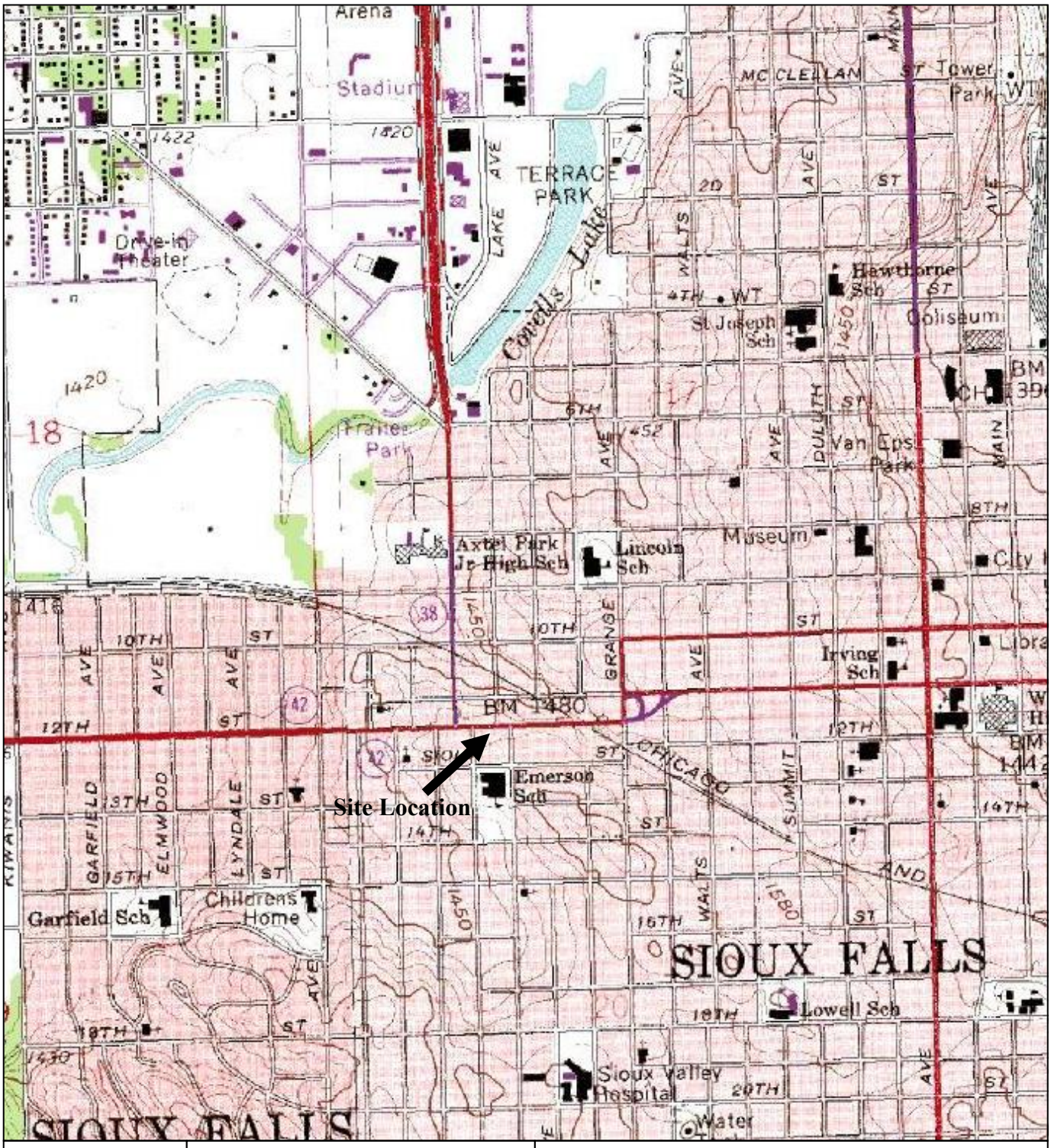
Table 1
PID Readings for Selected Soil Samples
Sinclair Retail, 1417 W 12th St
Sioux Falls, South Dakota

Sample ID	Location	Depth (ft)	PID
IS1	Island sample one North island west of building under south pump	1	200+
NIW1	North island west of building under south pump	4	ND
SIW2	under north pump	4	ND
NINW3	North island north of building west end	7	ND
NINE4	EAST END	11	150
PS1	20' West of north building island	8	40
NTE1	North tank east end	13	ND
NTM2		13	ND
NTW3		13	ND
MTE4	Middle tank east end	13	ND
MTM5		13	ND
MTW6		13	ND
STE7	South tank east end	13	ND
STM8		13	ND
STW9		13	ND

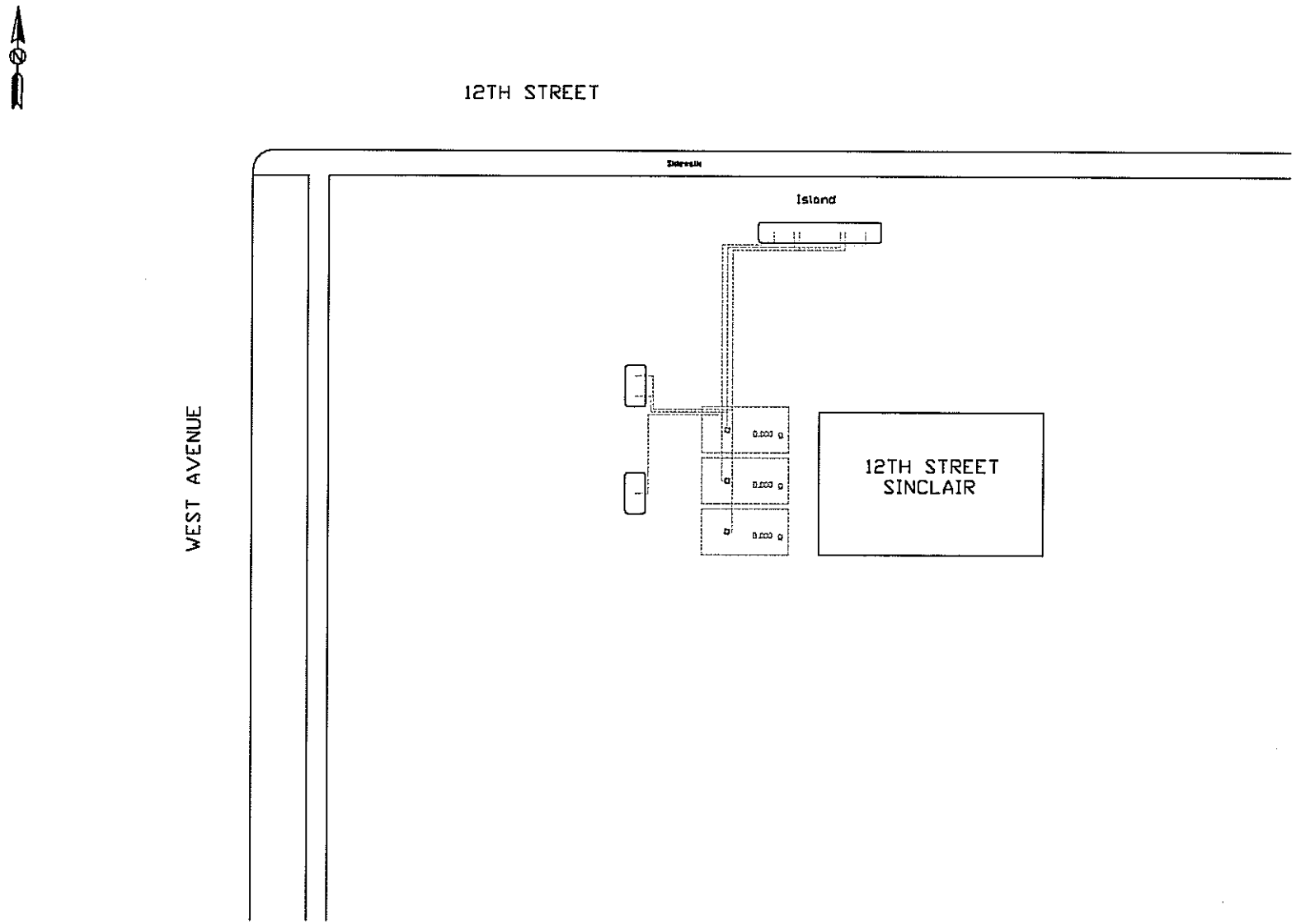
Table 2
Analytical Results for Soil Samples
Sinclair Retail, 1417 West 12th St
Sioux Falls, South Dakota

Sample ID	Depth in Feet	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	TPH as Diesel	Naphthalene
IS1 over excavated	1	<.61	**91.**	**45.5**	295.	**1673.**		
NIW1	4	<.20	<.20	<.20	<.20	<10.0		
SIW2	4	<.20	<.20	<.20	<.20	<10.0		
NINW3	7	<.20	<.20	<.20	<.20	<10.0		
NINE4	11	<.20	12.5	.34	91.5	**724.**		
PS1	8	<.20	<.20	<.20	<.20	<10.0		
NTE1	13	<.20	<.20	<.20	<.20	<10.0		
NTM2	13	<.20	<.20	<.20	<.20	<10.0		
NTW3	13	<.20	<.20	<.20	<.20	<10.0		
MTE4	13	<.20	<.20	<.20	<.20	<10.0		
MTM5	13	<.20	<.20	<.20	<.20	<10.0		
MTW6	13	<.20	<.20	<.20	<.20	<10.0		
STE7	13	<.20	<.20	<.20	<.20	<10.0		
STM8	13	<.20	<.20	<.20	<.20	<10.0		
Tier 1 Action Levels	--	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

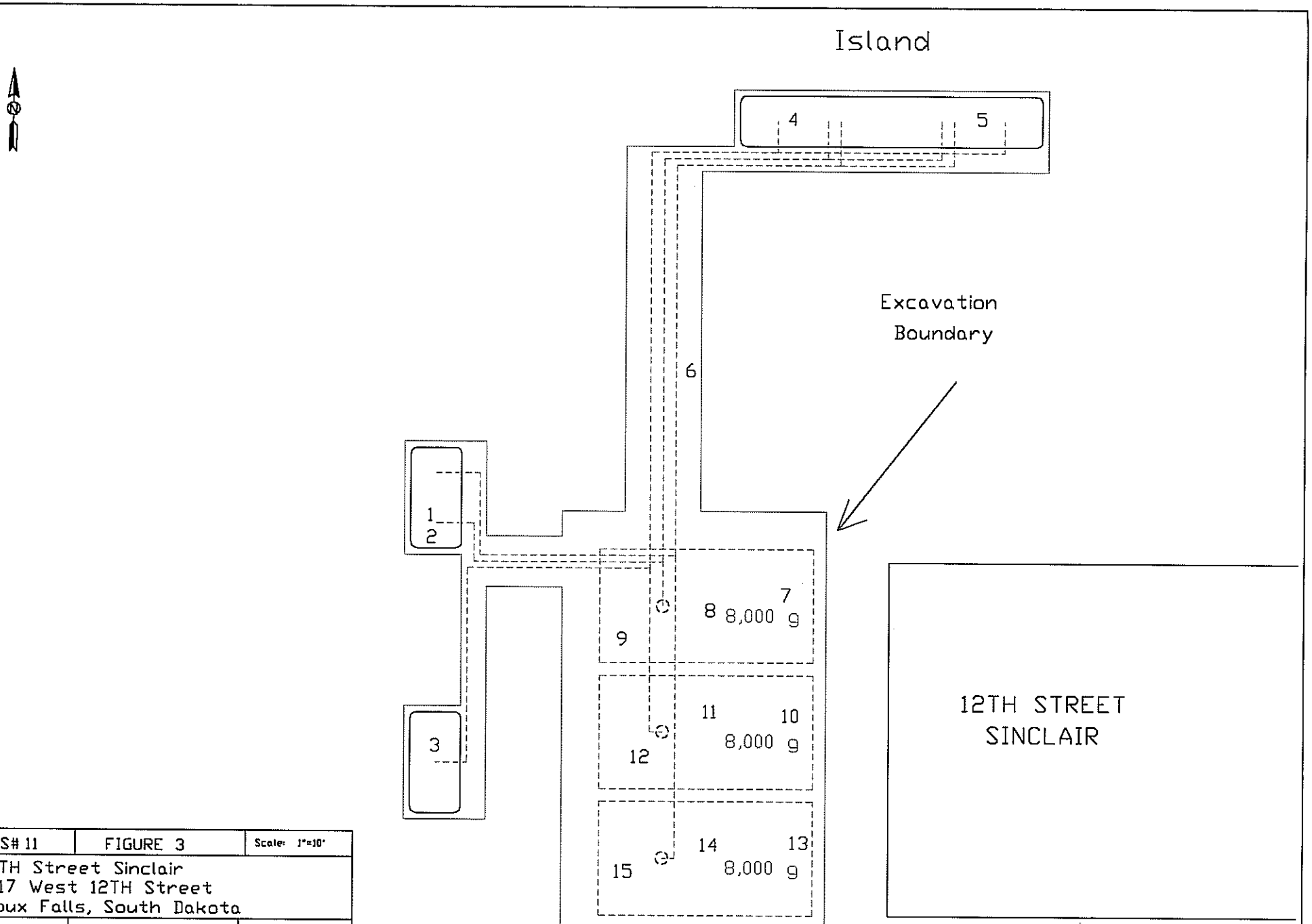
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #11	Figure 1
Topographic Site Location Map 12th Street Sinclair 1417 W. 12th Street Sioux Falls, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



PSS# 11	FIGURE 2	Scale: 1"=30'
12TH Street Sinclair 1417 West 12TH Street Sioux Falls, South Dakota		
TE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



PSS# 11	FIGURE 3	Scale: 1"=10'
12TH Street Sinclair 1417 West 12TH Street Sioux Falls, South Dakota		
TE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-502-3

PROJECT:
SINCLAIR RETAIL
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
SIOUX FALLS, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0608

DATE: June 16, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 08 , 2004
DATE RECEIVED: June 09, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
NIW1	1829-04					
	6/14/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
SIW2	1830-04					
	6/14/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
NINW3	1831-04					
	6/14/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-502-3

PROJECT:
SINCLAIR RETAIL
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
SIOUX FALLS, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0608

DATE: June 16, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 08 , 2004
DATE RECEIVED: June 09, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
NINE4	1832-04					
	6/14/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Toluene	12.50	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Ethylbenzene	0.34	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Xylenes	91.50	mg/kg	0.2 mg/kg
	6/14/2004	California USGS	TPH as Gasoline	724.00	mg/kg	10 mg/kg
PS1	1833-04					
	6/14/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
NTE1	1834-04					
	6/14/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-502-3

PROJECT:
SINCLAIR RETAIL
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
SIOUX FALLS, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0608

DATE: June 16, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 08 , 2004
DATE RECEIVED: June 09, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
NTM2	1835-04					
	6/14/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
NTW3	1836-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
MTWE4	1837-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-502-3

CHAIN OF CUSTODY # DENR0608

PROJECT:
SINCLAIR RETAIL
SIOUX FALLS, SD

DATE: June 16, 2004

SAMPLE MEDIUM: SOIL

CLIENT:
DENR
523 E CAPITOL AVE
SIOUX FALLS, SD 57501
PHONE:

DATE SAMPLED: June 08 , 2004
DATE RECEIVED: June 09, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
MTM5	1838-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
MTW6	1839-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
STE7	1840-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-502-3

PROJECT:
SINCLAIR RETAIL
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
SIOUX FALLS, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0608

DATE: June 16, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 08 , 2004
DATE RECEIVED: June 09, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
STM8	1841-04					
	6/14/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/14/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
STW9	1842-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

South Dakota Department of Environment and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

04-502-3 DENR CPU8

CHAIN OF CUSTODY RECORD

Billing ↓

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	BTEX	TPH as Gasoline	TPH as waste oil		
	Sinclair Retail 1417 W 12th St SF, SD 57104						Send bill & results to Terry Florentz DENR - GWQ REMARKS 523 E Capital Ave Pi SD 57501 fax all results to Scott Bick 362 2768

SAMPLERS (Signature)
Scott Bickler 362-3500

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION						
	6/5/04										
NIW1		—		X	North island west ~~of Bldg~~ end 4'bg	X	X			1829	
SIW2		—			South island west of Bldg 4'bg	X	X			1830	
NINW	6/6/04	—			North island north of Bldg west end	X	X			1831	
NINE	6/6/04	—			" " " " " east end	X	X			1832	Rid 150
64PS1	6/6/04	—			Piping sample 2c' west of north island	X	X			1833	island north of Bld Rid 40 82
NTE1	6/8/04	—			North tank east end 13'bg	X	X			1834	Rid NO
NTM2	6/8/04	—			13'bg	X	X			1835	" "
NTW3		—			13'bg	X	X			1836	" "
MTRE4		—			Middle tank east end "	X	X			1837	" "
MTM5		—			"	X	X			1838	" "
MTW6		—			"	X	X			1839	" "
STE7		—			South tank east end "	X	X			1840	" "
STM8		—			"	X	X			1841	" "
STW9		—			"	X	X			1842	" "

JUN 2004 RECEIVED DENR Ground Water Quality Program

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Scott Bickler	6-9-04 10:2				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	

Distribution: Original Accompanies Shipment, First Copy to Coordinator Field Files, Second Copy to Representative of Inspected Facility

Split Samples
☐ Accepted ☐ Declined _____ Signature

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-502-3

PROJECT:
SINCLAIR RETAIL
SIOUX FALLS, SD

CLIENT:
DENR
523 E CAPITOL AVE
SIOUX FALLS, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0607

DATE: June 08, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 07 , 2004
DATE RECEIVED: June 07, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
IS1	1809-04					
	6/7/2004	EPA 8020	Benzene	0.61	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Toluene	91.00	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Ethylbenzene	45.50	mg/kg	0.2 mg/kg
	6/7/2004	EPA 8020	Xylenes	295.00	mg/kg	0.2 mg/kg
	6/7/2004	California USGS	TPH as Gasoline	1673.00	mg/kg	10 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

GEOTEK ENGINEERING & TESTING SERVICES, INC.

South Dakota Department of Environment and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

04-502-3

CHAIN OF CUSTODY RECORD

Needs a file # DENR 36467

PROJ. NO.	PROJECT NAME
	Sinclair Retail 1717 W 12th ST SF SD 57104

SAMPLERS (Signature)

Scott Bickler 362-3500

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BTEX	TPH-G				REMARKS
IS1	6-1-04			X	North island west of bldg. 1' below elbow	1	X	X			1809	rush pid 200+

Send bill & results to:
Terry Florentz
DENR-GWQ
523 E Capitol Ave
Pierre SD 57501

Fax all results to:
Scott Bickler 362-2768
(results faxed 6-1-04)

RECEIVED JUN 2004 DENR Ground Water Quality Program

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Scott J. Bickler	6/7/04 2:20				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	

Distribution: Original Accompanies Shipment, First Copy to Coordinator Field Files, Second Copy to Representative of Inspected Facility

Split Samples
☐ Accepted ☐ Declined _____
Signature

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	**12**	Contact :	David Fry
Site Name:	Westside Convenience	Address :	3308 Northbrook Dr
Address:	1900 Summit Street	City :	Sioux City IA 51105
City :	Yankton	Phone :	
County :	Yankton		

Legal Description of Property: Lot 12, Pal Christensen's Addition to the City of Yankton

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☐	☐	☐
☒	Dates of upgrades or replacement of the storage tank systems.	☐	☐	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☒	Repair, operation, and maintenance records.	☐	☐	☐
☐	Storage tank fuel inventory, including tank water level.	☐	☐	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	2	10,000 gallon	1	4,000 gallon		
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Xerxes
Tank Installation Date:	May 1995
Tank Installer Name:	Sioux Equipment

Piping Manufacturer Name:	Ameron (3000L)
Piping Installation Date:	May 1995
Piping Installer Name:	Sioux Equipment
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :B & H Petroleum	Phone Number: (507) 381-4507
Name of Person(s) Performing Test: Dan Halbmaier	Tester Certification Number and Expiration Date: #MNB0101111204R 11-24-04
Manufacturer of Test Equipment / Model or Version: Petro-Tite Line Tester	
Equipment Threshold, GPH: .05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: May 25, 04	

Pressure Test																		Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	50	2"/60'	0715	.036		0		.001		0					.001	0800	P	0900	50	0940	P
2	50	2"/55'	0715	.019		0		.001		.002					.003	0800	P	1030	50	1105	P
3	50	2"/45'	0815	.016		.002		.001		0		0			.003	0915	P	1130	50	1200	P
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Spill Containment Bucket
☒	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☐	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☒	Pea Rock				
☐	Other				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☒	Pea Rock	☐	Bulk Product		
☐	Other	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☒	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge:	/ / month/day/year
Estimated number of gallons discharged:	

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☐	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This system, composed of two 10,000 gallon and one 4,000 gallon tank, was the first at this location and installed in 1995. The station was operated by multiple individuals and closed in 1999. The system was removed to permit the location's use for a different commercial purpose.

After some effort, as-built drawings, maintenance and operating manuals were located for the site.

Records of automatic tank gauging and precision line testing events were not available

Flex piping was used to connect the buried rigid product lines to vertical dispenser risers. Although these lines were covered with boots, some pipes had begun developing corrosion.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Westside Convenience

Street Address: 1900 S Summit City: Yankton

Owner: David Fry Phone #: (712) 258-5240

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	10,000	Gasoline	Good
2	10,000	Gasoline	Good
3	4,000	Diesel	Good

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 60'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 2 Number of islands removed: 2

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes X No ____ If yes, at what depth? 9'

Was free product encountered in the excavation? Yes ____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: none Loose cubic yards of fill used: 168

Tank basin was backfilled with sand.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin consisted of sand. At three feet clay was encountered beneath the islands. The tanks were strapped down and a concrete slab was located beneath each tank. Soil samples were obtained from the ends of the concrete slabs. A lot of cave in was taking place which resulted in not having as many soil samples. However, there was no evidence of impacted soils from the tanks, islands or piping.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

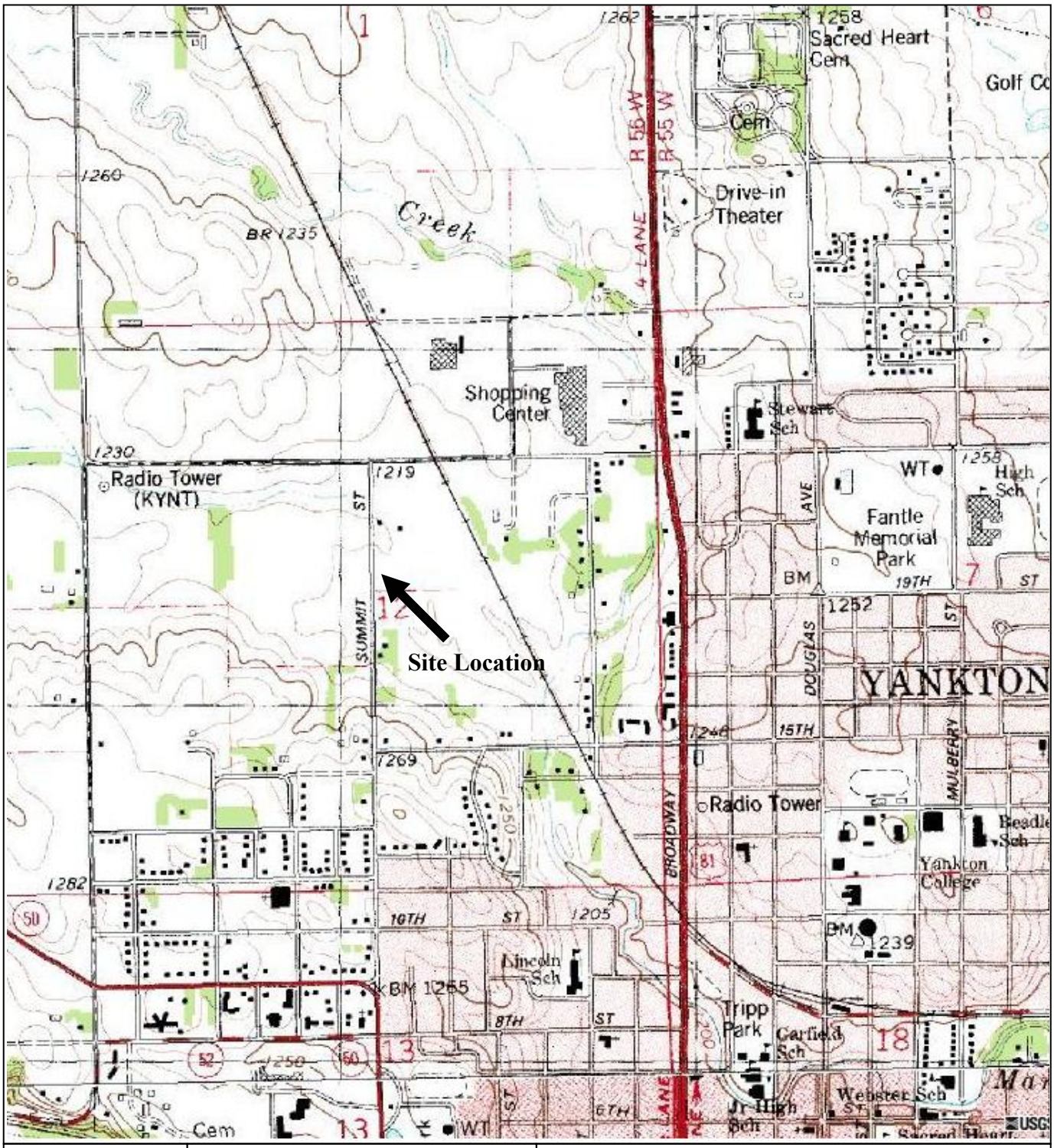
Table 1
PID Readings for Selected Soil Samples
Westside Convenience
Yankton, South Dakota

Sample ID	Location	Depth (ft)	PID
NI1	North island sample one	3	ND
SI2	South island	3	ND
ETN1	East tank north end	9.5	ND
ETS2		9.5	ND
MTS4	Middle tank south end	9.5	ND
MTN5		9.5	ND
WTW7	West tank west side	9.5	ND

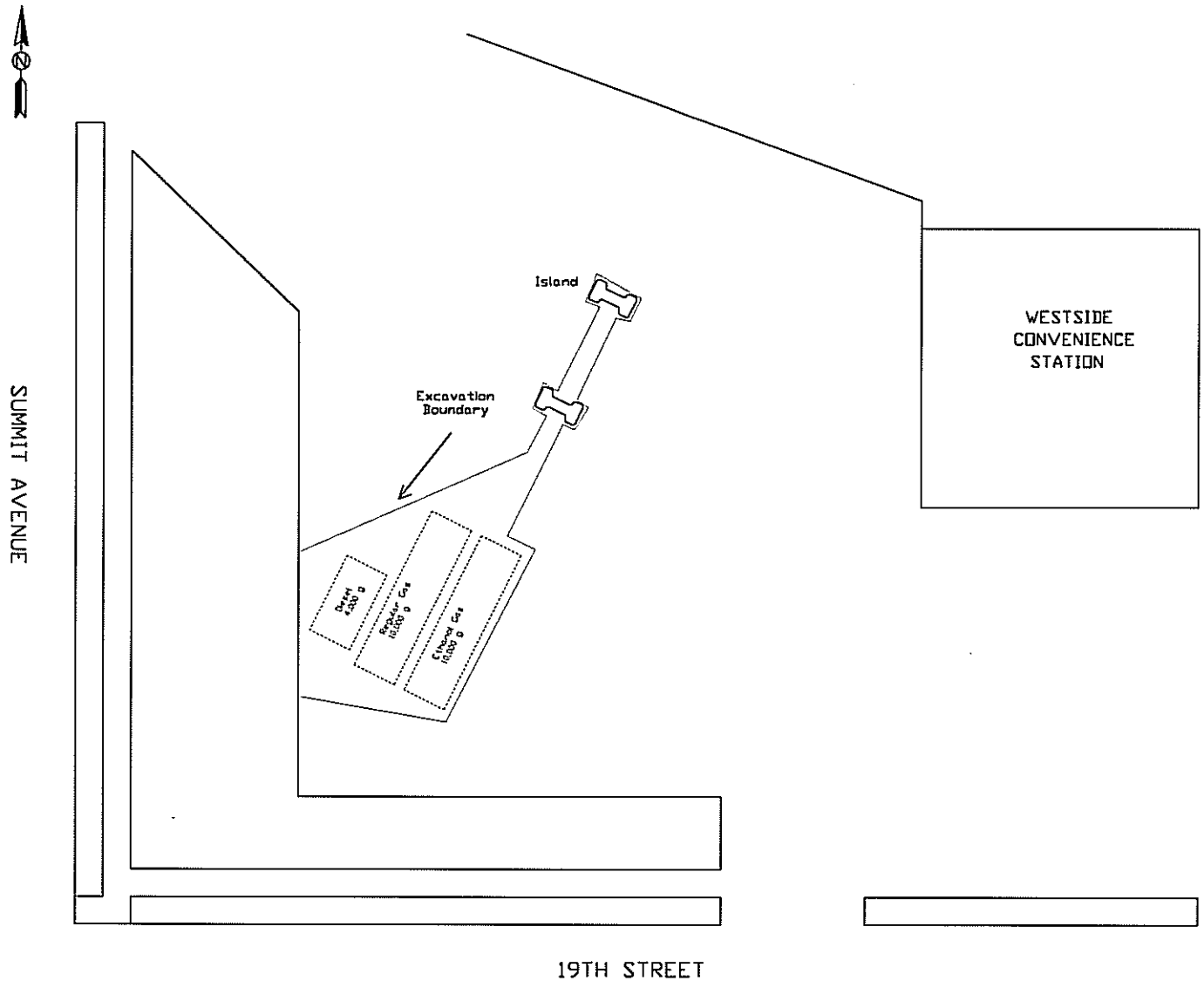
Table 2
Analytical Results for Soil Samples
Westside Convenience
Yankton, South Dakota

Sample ID	Depth in Feet	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	TPH as Diesel	Naphthalene
NI1	3	<.20	<.20	<.20	<.20	<10.0		
SI2	3	<.20	<.20	<.20	<.20	<10.0		
ETN1	9.5	<.20	<.20	<.20	<.20	<10.0		
ETS2	9.5	<.20	<.20	<.20	<.20	<10.0		
MTS4	9.5	<.20	<.20	<.20	<.20	<10.0		
MTN5	9.5	<.20	<.20	<.20	<.20	<10.0		
WTW7	9.5						<10.0	<1.0
Tier 1 Action Levels	--	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

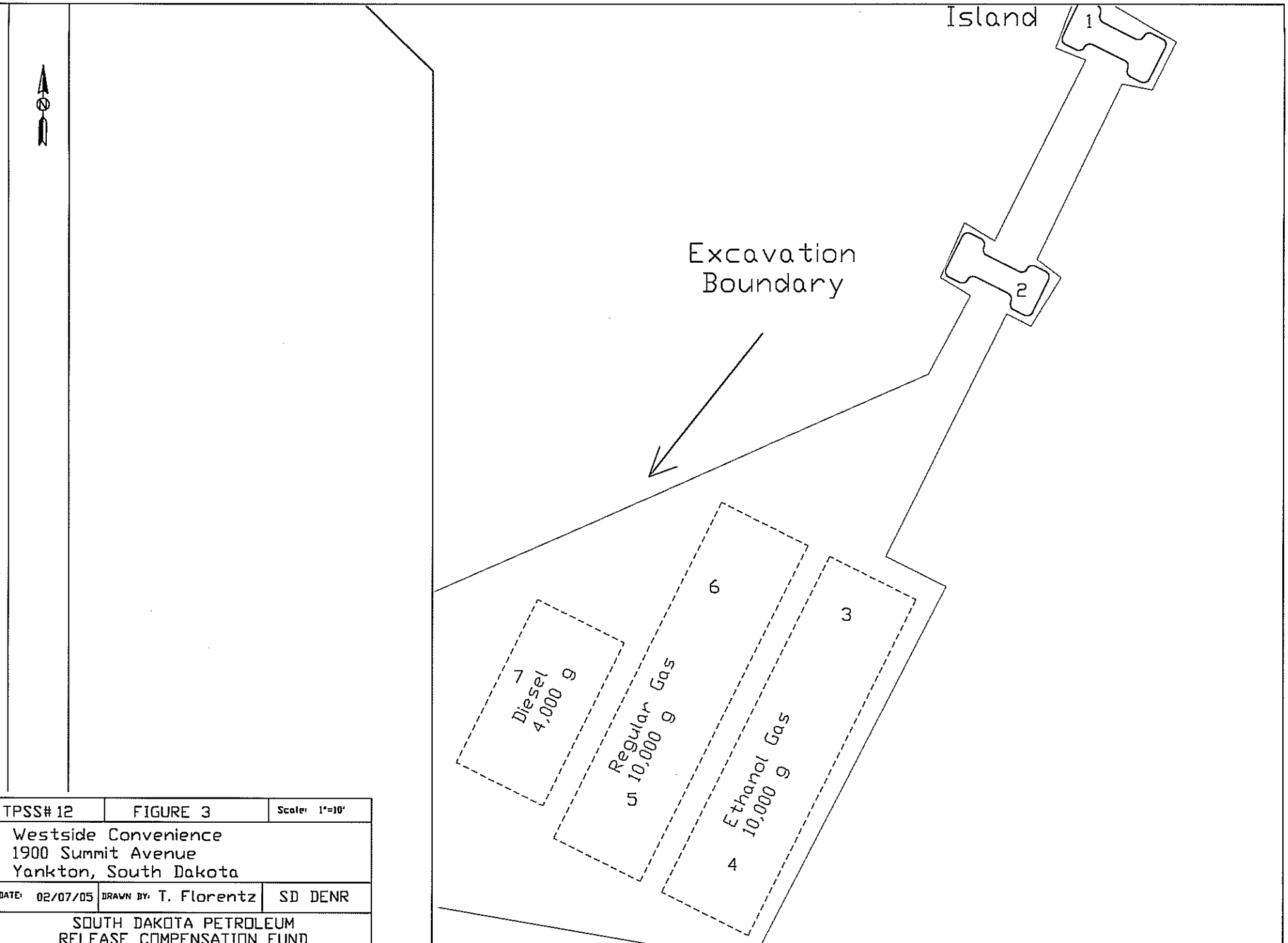
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #12	Figure 1
Topographic Site Location Map Westside Convenience 1900 Summit Avenue Yankton, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



TPSS# 12	FIGURE 2	Scale: 1"=30'
Westside Convenience 1900 Summit Avenue Yankton, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



TPSS# 12	FIGURE 3	Scale: 1"=10'
Westside Convenience 1900 Summit Avenue Yankton, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-528-3

CHAIN OF CUSTODY # DENR0610

PROJECT:
WESTSIDE CONVENIENCE
YANKTON, SD

DATE: June 16, 2004

SAMPLE MEDIUM: SOIL

CLIENT:
DENR
523 E Capitol Ave
Pierre, SD 57501
PHONE:

DATE SAMPLED: June 10 , 2004
DATE RECEIVED: June 10, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
NI1	1861-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
SI2	1862-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
ETN1	1863-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-528-3

CHAIN OF CUSTODY # DENR0610

PROJECT:
WESTSIDE CONVENIENCE
YANKTON, SD

DATE: June 16, 2004

SAMPLE MEDIUM: SOIL

CLIENT:
DENR
523 E Capitol Ave
Pierre, SD 57501
PHONE:

DATE SAMPLED: June 10 , 2004
DATE RECEIVED: June 10, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
ETS2	1864-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
MTS4	1865-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
MTN5	1866-04					
	6/15/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/15/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

South Dakota Department of Environment and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

DENR 0610

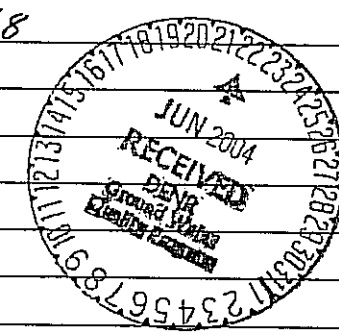
CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
04-528-3	Westside Convenience - Yankton

SAMPLERS (Signature)

Scott Bickler 362-3500

STAT. NO.	DATE 2004	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH-G	BTEX	TPH - Diesel	naphthalene	REMARKS
NI	6-10	—		X	1861, 3' below N island	1	+	+	PID ND		Send bill & results to: Terry Florentz DENR - GWQ 523 E Capital Ave Pierre, SD 57501
SI	6-10	—		X	1862, 3' below S island	1	+	+	PID ND		
E[redacted]T 1					1863 east [redacted] tank 9.5 fbg north [redacted] end	1	+	+			
E[redacted]T 2					1864 fbg south [redacted] end	1	+	+			
[redacted]											
MT 4			1865	X	middletank 9.5 fbg South [redacted] end	1	+	+	PID ND		Fax results to: Scott Bickler 362-2768
MT 5			1866	X	9.5 fbg north [redacted] end	1	+	+	PID ND		
[redacted]											
[redacted]T 7			1867	X	west [redacted] tank fbg westside [redacted]	1			+	+ PID N.D	
[redacted]											



Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Scott Bickler	6-10-04 2:57				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	

Distribution: Original Accompanies Shipment, First Copy to Coordinator Field Files, Second Copy to Representative of Inspected Facility

Split Samples
☐ Accepted ☐ Declined _____
Signature

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	13	Contact :	Larry Blaesi
Site Name:	Broadway Texaco	Address :	P.O. Box 317
Address:	1101 Broadway	City :	Jesup IA 50648
City :	Yankton	Phone :	(800) 934-7011
County :	Yankton		

Legal Description of Property: South 30 feet of Lot 6, and all of Lots 7 & 8, Block 3, W.A. Burleigh Addition, City and County of Yankton

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☐	Documentation of storage system installations, replacements, and upgrades.	☐	☐	☐
☐	Dates of upgrades or replacement of the storage tank systems.	☐	☐	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☐	Storage tank fuel inventory, including tank water level.	☐	☐	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	1	10,000 gal	1	12,000 gal (c)		
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Modern Welding Company of Iowa
Tank Installation Date:	1996
Tank Installer Name:	Seneca

Piping Manufacturer Name:	Ameron
Piping Installation Date:	1996
Piping Installer Name:	Seneca
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :B & H Petroleum	Phone Number: (507) 381-4507
Name of Person(s) Performing Test: Dan Halbmaier	Tester Certification Number and Expiration Date: #MNB0101111204R 11-24-04
Manufacturer of Test Equipment / Model or Version: Petro-Tite Line Tester	
Equipment Threshold, GPH: .05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: May 24, 04	

				Pressure Test														Helium Test			
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Increments Lost	Leak Rate / Hr	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	60	2"/35'	1200	.028		0		.006		.001					.007	1245	P	1410	50	1440	P
2	60	2"/50'	1215	.047		.004		0		0					.004	1300	P	1500	50	1645	P
3	60	2"/67'	1445	.078		.006		0		0					.006	1530	P	1605	50	1645	P
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☒	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☐	Single Wall		
☐	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☒	Double Wall (different material)	☐	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☒	Flow Shut-Off
☐	Unknown	☒	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☒	Pea Rock				
☐	Other				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Dispenser Sump(s)
☐	Fiberglass	☐	Impressed Current System	☐	No Dispenser Sumps
☐	Composite	☐	Single Wall	☐	Unknown
☐	Unprotected Steel	☒	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☒	Piping Sump(s)
☒	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☐	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☒	Pea Rock	☐	Bulk Product		
☐	Other	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☒	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☒	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☒	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☒	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge:	/ / month/day/year
Estimated number of gallons discharged:	

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☐	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

***If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This location had been a service station at least since 1961. An earlier release, since closed, had occurred in 1991. The current system of one 10,000 gallon UST and one compartmented 12,000 gallon UST was installed in 1996. The current owners determined they could no longer cost effectively continue ownership of the site and volunteered to participate in the pathology study.

Little documentation was available from the owners. The site proposal was received from the DENR but no as-built drawings, operating manuals, or maintenance manuals were received. No documentation was available to show that required inspections and checks had been completed.

The removed components were in excellent condition however, one installation problem was noted. Interstitial spaces for all three dispensed products were connected from UST to far dispenser sump. Two of the three lines were configured so any fluid contained the interstitial space would drain to the tank sump. The third line was configured so fuel would drain to a dispenser sump. There were no connections to show a sensor had been or was able to be contained in this dispenser sump.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Broadway Texaco

Street Address: 1101 S Broadway City: Yankton

Owner: Larry Blaesi Phone #: 800-934-7011

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	10,000	Gasoline	Good
2	12,000	Gasoline	Good

Piping

Was the piping removed at this site? Yes X No ____ Length of piping removed: 60'

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 2 Number of islands removed: 2

If the pump islands were not removed, please explain why. Six dispensers/three islands

Was groundwater encountered in the excavation? Yes _____ No X If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No X If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: none Loose cubic yards of fill used: 154

The tank basin was backfilled with sand.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin consisted of sand. At 12 feet sandy clay was encountered. A concrete slab had been poured under the tanks to help anchor them down. Thus, soil samples were obtained off the sides and below the slab. The appropriate number of soil samples were not obtained due to extensive cave in.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Scott Bickler Signature: _____ Date: _____

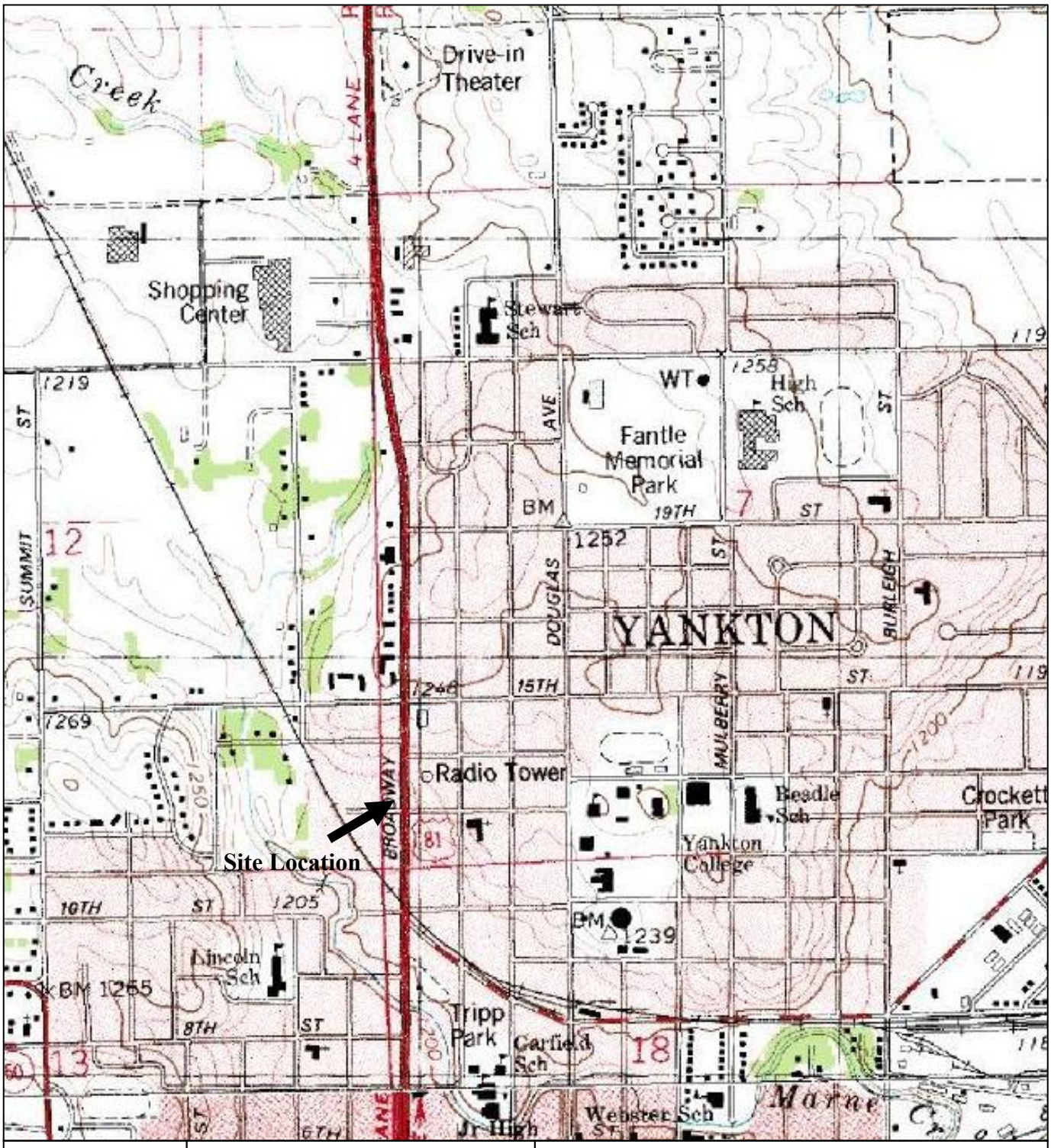
Table 1
PID Readings for Selected Soil Samples
Broadway Texaco
Yankton, South Dakota

Sample ID	Location	Depth (ft)	PID
WI1	West island sample one	5	ND
EI2	East island sample two	5	5
WTN1	West tank north end	12	10
WTM2	Middle on top of concrete slab	11	5
ETN4	East tank north end	12	50

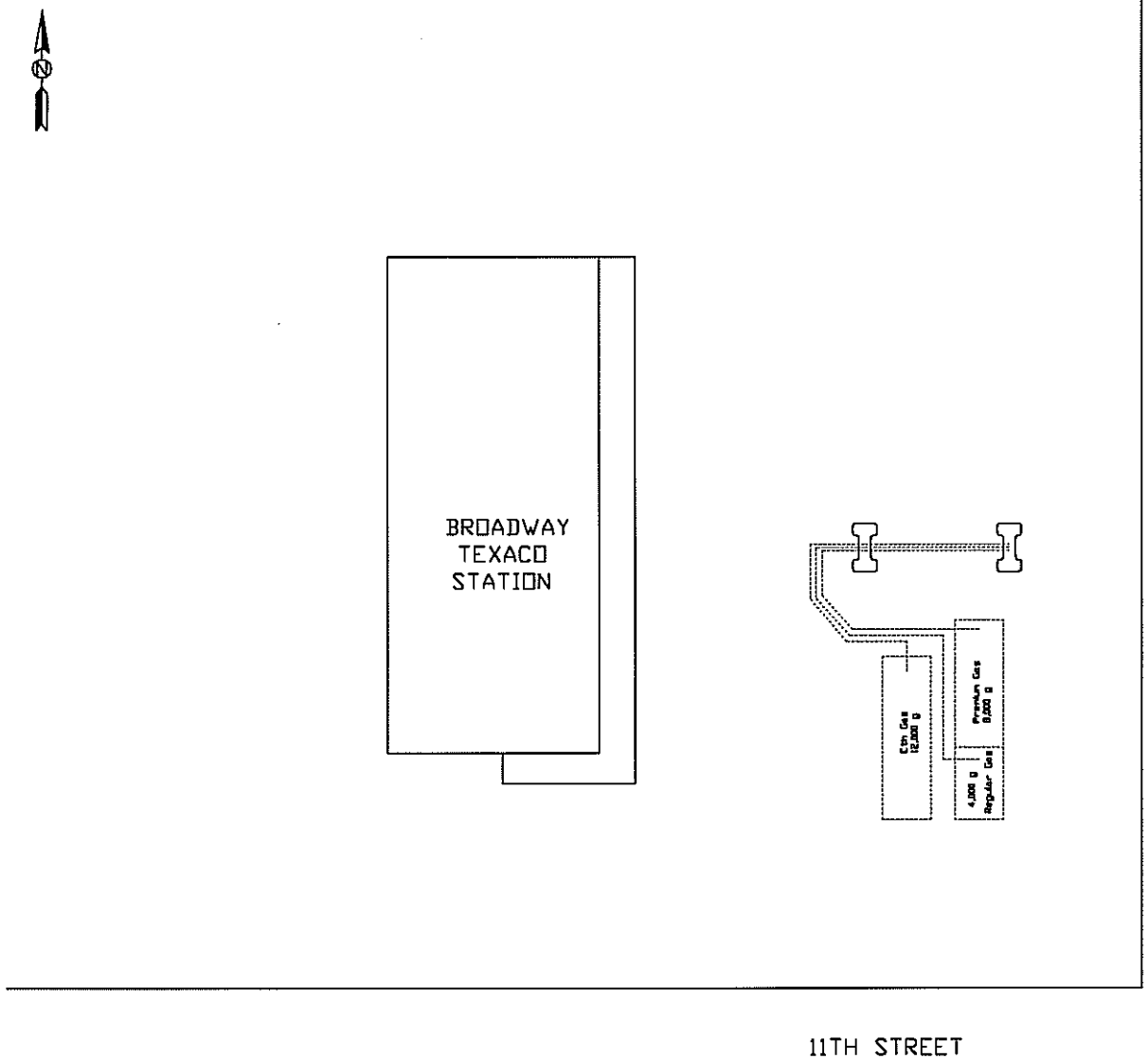
Table 2
Analytical Results for Soil Samples
Broadway Texaco
Yankton, South Dakota

Sample ID	Depth in Feet	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	TPH as Diesel	Naphthalene
WI1	5	<.20	<.20	<.20	<.20	<10.0		
EI2	5	<.20	<.20	<.20	<.20	<10.0		
WTN1	12	<.20	<.20	<.20	<.20	<10.0		
WTM2	11	<.20	<.20	<.20	<.20	<10.0		
ETN4	12	<.20	<.20	<.20	<.20	51.1		
Tier 1 Action Levels	--	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**500.0**	**25.0**

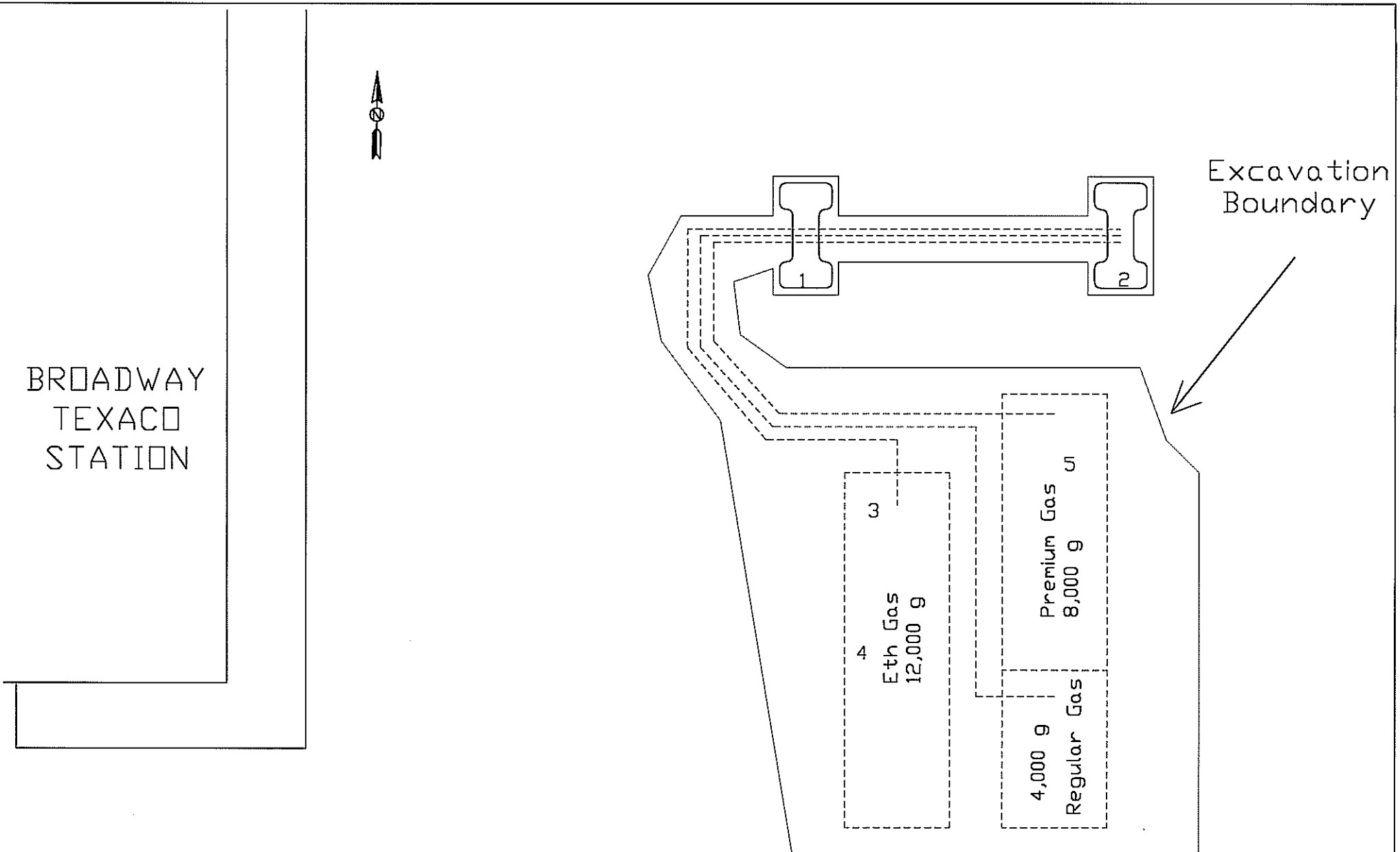
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



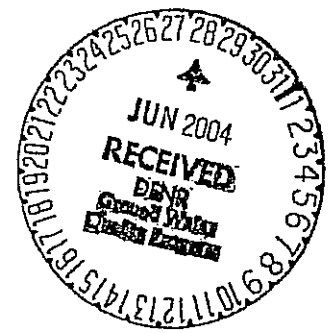
TPSS #13	Figure 1
Topographic Site Location Map Broadway Texaco 1101 Broadway Avenue Yankton, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



TPSS# 13	FIGURE 2	Scale: 1"=30'
Broadway Texaco 1101 South Broadway Yankton, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



TPSS# 13	FIGURE 3	Scale: 1"=10'
Broadway Texaco 1101 Broadway Avenue Yankton, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-552-3

PROJECT:
BROADWAY TEXACO
YANKTON, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0614A

DATE: June 23, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 14 , 2004
DATE RECEIVED: June 15, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
WI1 5'	1878-04					
	6/22/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
EI2 5'	1879-04					
	6/22/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
WTN1 12'	1880-04					
	6/22/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg

REPORT OF ANALYTICAL RESULTS

PROJECT # : 04-552-3

PROJECT:
BROADWAY TEXACO
YANKTON, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501
PHONE:

CHAIN OF CUSTODY # DENR0614A

DATE: June 23, 2004

SAMPLE MEDIUM: SOIL

DATE SAMPLED: June 14 , 2004
DATE RECEIVED: June 15, 2004

SAMPLER: Scott Bickler DENR 362-3500

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
WTM2 11'	1881-04					
	6/22/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	California USGS	TPH as Gasoline	<10.00	mg/kg	10 mg/kg
ETN4 12'	1882-04					
	6/22/2004	EPA 8020	Benzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Toluene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Ethylbenzene	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	EPA 8020	Xylenes	<0.20	mg/kg	0.2 mg/kg
	6/22/2004	California USGS	TPH as Gasoline	51.10	mg/kg	10 mg/kg

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

GEOTEK ENGINEERING
& TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, South Dakota 57104
605-335-5512 • FAX 605-335-0773

ANALYTICAL INVOICE

PROJECT # : 04-552-3

DATE: June 23, 2004

INVOICE # : DENR0614A

PROJECT:
BROADWAY TEXACO
YANKTON, SD

CLIENT:
DENR
523 E CAPITOL AVE
PIERRE, SD 57501

PHONE:

Description	Quantity	Unit Price	Extention
BTEX only	0	$80.00	$0.00
TPH As Gasoline plus BTEX	5	$100.00	$500.00
TPH As Diesel/Naphthalene Screen	0	$100.00	$0.00
		Invoice Total	$500.00

South Dakota Department of Environment and Natural Resources
Joe Foss Building, Pierre, South Dakota 57501

DENR 0614A

CHAIN OF CUSTODY RECORD

PROJ. NO. 04-552-3

PROJECT NAME: Broadway Texaco - Yankton

SAMPLERS (Signature): Scott Bickler 362-3500

STAT. NO.	DATE 2004	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS Soil	TPH - Gasoline	BTEX			REMARKS
1878	6/14	—		X	WIL 5'	1	X	X	pid	ND	Send bill & results to: Terry Florente
1879	6/14	—		X	EI2 5'	1	X	X	pid	5ppm	DENR - GWQ
1880	6/15			X	WTN1 12'	1	X	X	pid	10ppm	523 E Capital Ave
1881	6/15			X	WTM2 above concrete slab 11'	1	X	X	pid	5ppm	Pierre, SD 57501-3182
1882	6/15			X	ETN4 12'	1	X	X	pid	50ppm	Fax results to: Scott Bickler 362-2768

JUN 2004 RECEIVED DENR Ground Water Quality Program

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Scott Bickler	6-15-04 2:30				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time		Remarks:
			6-15-04	2:30	

Split Samples
☐ Accepted ☐ Declined _____ Signature

Distribution: Original Accompanies Shipment, First Copy to Coordinator Field Files, Second Copy to Representative of Inspected Facility

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	**14**	Contact :	Donald Policky II
Site Name:	Big D Oil	Address :	3685 Sturgis Road
Address:	2221 Lazelle Street	City :	Rapid City
City :	Sturgis	Phone :	605-342-6777
County :	Meade		

Legal Description of Property: That portion of Lots 15-21 north of Hwy ROW Block 6 Comstocks Addition City of Sturgis

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☐	☒	☐
☒	Dates of upgrades or replacement of the storage tank systems.	☐	☒	☐
☒	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☒	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☐	☒	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☒	Monthly release detection results.	☐	☒	☐
☐	Results of internal inspections.	☐	☐	☐
☒	Results of tightness, pressure, and integrity tests.	☐	☒	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	3	6,000 gal	1	10,000 gal		
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Palmer
Tank Installation Date:	1994
Tank Installer Name:	Grimm's Pump & Tank

Piping Manufacturer Name:	Lily
Piping Installation Date:	1994
Piping Installer Name:	Grimm's Pump & Tank
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :Grimms Pump & Tank	Phone Number: 605-342-6777
Name of Person(s) Performing Test: Rex Woitte	Tester Certification Number and Expiration Date: 1085.LTN 6-15-06
Manufacturer of Test Equipment / Model or Version: Accurite	
Equipment Threshold, GPH: .01 gph	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: 6-21-04	

Pressure Test																		Helium Test			
				Line Test Results																	
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	40	1.5" 90'	1345	.001	.002											1415	P	1045	50	1200	P
2	40	1.5" 90'	1600	.001	.002											1630	P	1200	50	1245	P
3	40	1.5" 90'	1835	.001	.002											1905	P	1300	50	1345	P
4	40	1.5" 90'	1055	000	000											1135	P	1400	50	1445	P
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☒	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other chips				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☐	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☒	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other chips	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☒	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge:	/ / month/day/year
Estimated number of gallons discharged:	

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☐	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☐	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

Tanks removed were the second generation. Original system installed in 60's and replaced in 1994. Spill buckets were found to be "shop made" and did not contain a drain valve. Consequently, the buckets were full of water, mud, & debris. When piping was removed, the old piping from the original system was found to still be in place. The old pipes still contained some product and approximately 5 gallons was recovered. Some of the fire valves on the islands lacked bracing, and shear portion may not have broken if a collision occurred with the dispenser. Piping was coated steel with cathodic protection. Test wires for piping were located under the dispensers. A CP test was done and the lines all passed.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Sturgis Big D

Street Address: 2221 Lazelle City: Sturgis

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	10,000	Unleaded Regular Gasoline	Good to excellent
2	6,000	Premium Unleaded Gasoline	Good to excellent
3	6,000	Unleaded Ethanol Gasoline	Good to excellent
4	6,000	Diesel	Good to excellent

Piping

Was the piping removed at this site? Yes x No ____

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 2 Number of islands removed: 2

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No x If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No x If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 0 Loose cubic yards of fill used: 170

Imported backfill consisting of silty clay was used to replace the tank volume.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin had been backfilled with sand and pea rock, with silt and sand alluvium sidewalls to approximately 13 feet. No visible staining of the tank basin or trench backfill was observed. The piping and tanks that comprised the existing tank system at this site were in excellent condition.

PID screening detected only trace organic-vapor concentrations of 1.0 ppm or less near the islands and piping. At one location within the tank basin, the PID detected an organic-vapor concentration of 20.0 ppm. Laboratory analyses of soil samples from the piping trenches and tank basin indicated that while petroleum hydrocarbons were present in 3 of the 8 samples, concentrations were well below Tier I Action levels for petroleum hydrocarbons in soil. Additional assessment and cleanup does not appear to be warranted.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Terry Florentz Signature: _____ Date: _____

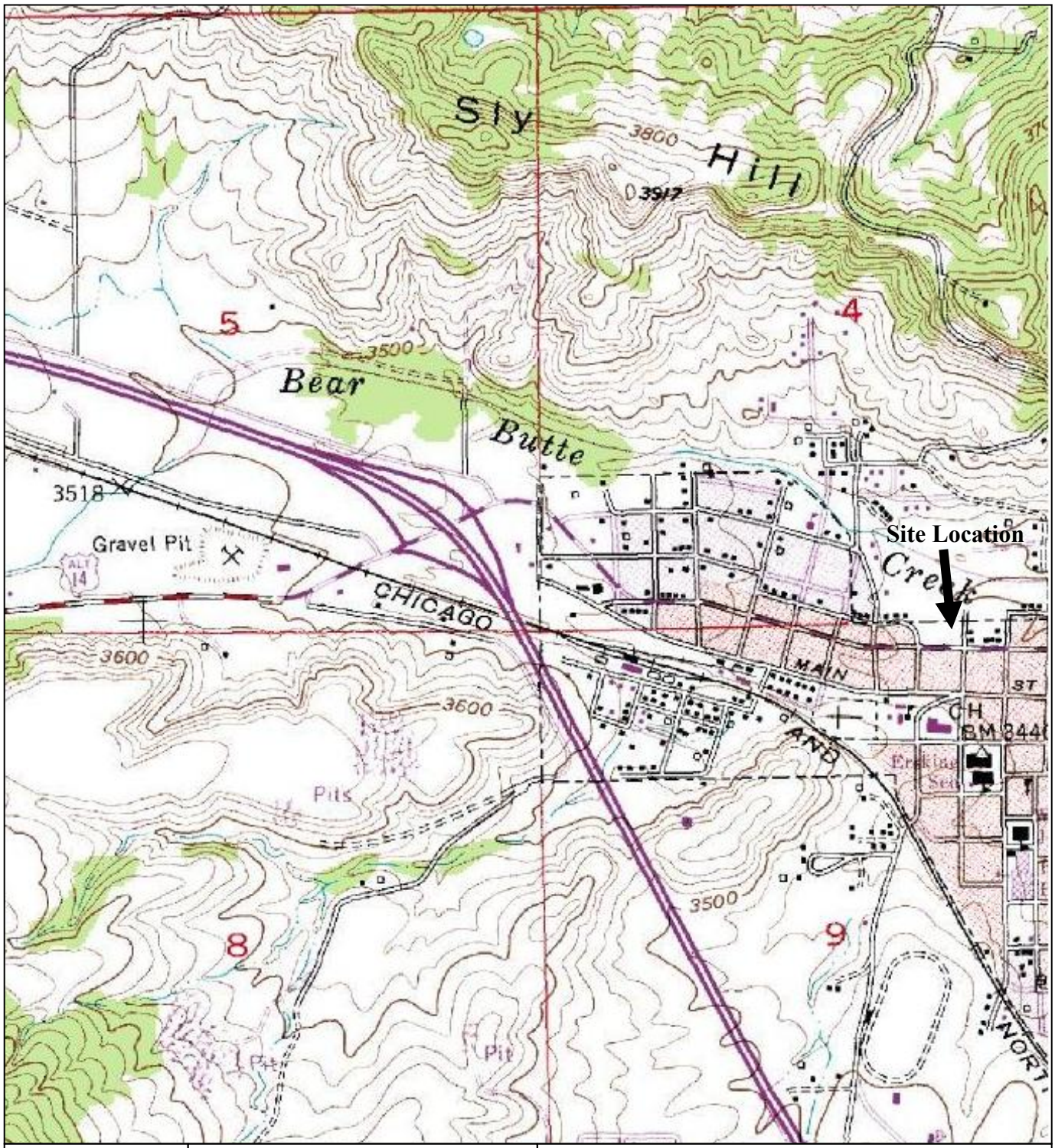
Table 1
PID Readings for Selected Soil Samples
Sturgis Big D
Sturgis, South Dakota

Sample ID	Location	Depth (ft)	PID
#1	West Island	3	0.0
#2	North Island	3	0.0
#3	South Island	3	0.0
#4	East Island	3	1.0
#5	Middle Piping	3	0.5
#6	East Tank Basin	13	0.0
#7	West Tank Basin	13	20.0
#8	South Tank Basin	13	1.0

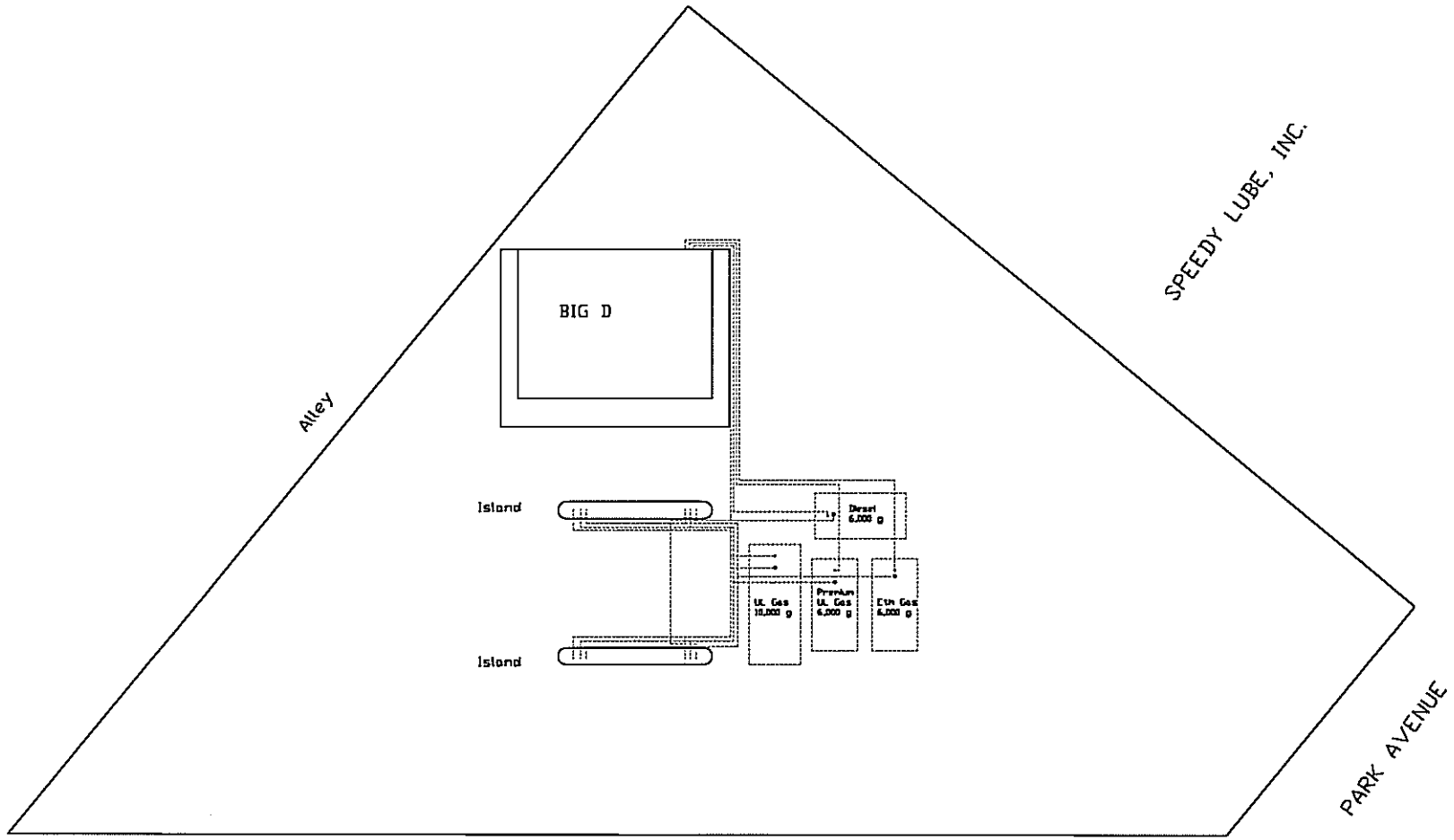
Table 2
Analytical Results for Soil Samples
Sturgis Big D
Sturgis, South Dakota

Sample ID	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Fuel Oil	Naphthalene
#1) Sturgis-West Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	2.	< 0.2	11.	0.58
#2) Sturgis-North Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		0.04
#3) Sturgis-South Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#4) Sturgis-East Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#5) Sturgis-Middle Pipe-3'							< 10.0	< 0.66
#6) Sturgis-Tanks E-13'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2	< 10.0	0.62
#7) Sturgis-Tanks W-13'	< 1.0	0.24	< 1.0	0.54	20.	< 1.0	31.	< 1.0
#8) Sturgis-Tanks S-13'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2	7.1	0.06
Tier 1 Action Levels	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**--**	**500.0**	**25.0**

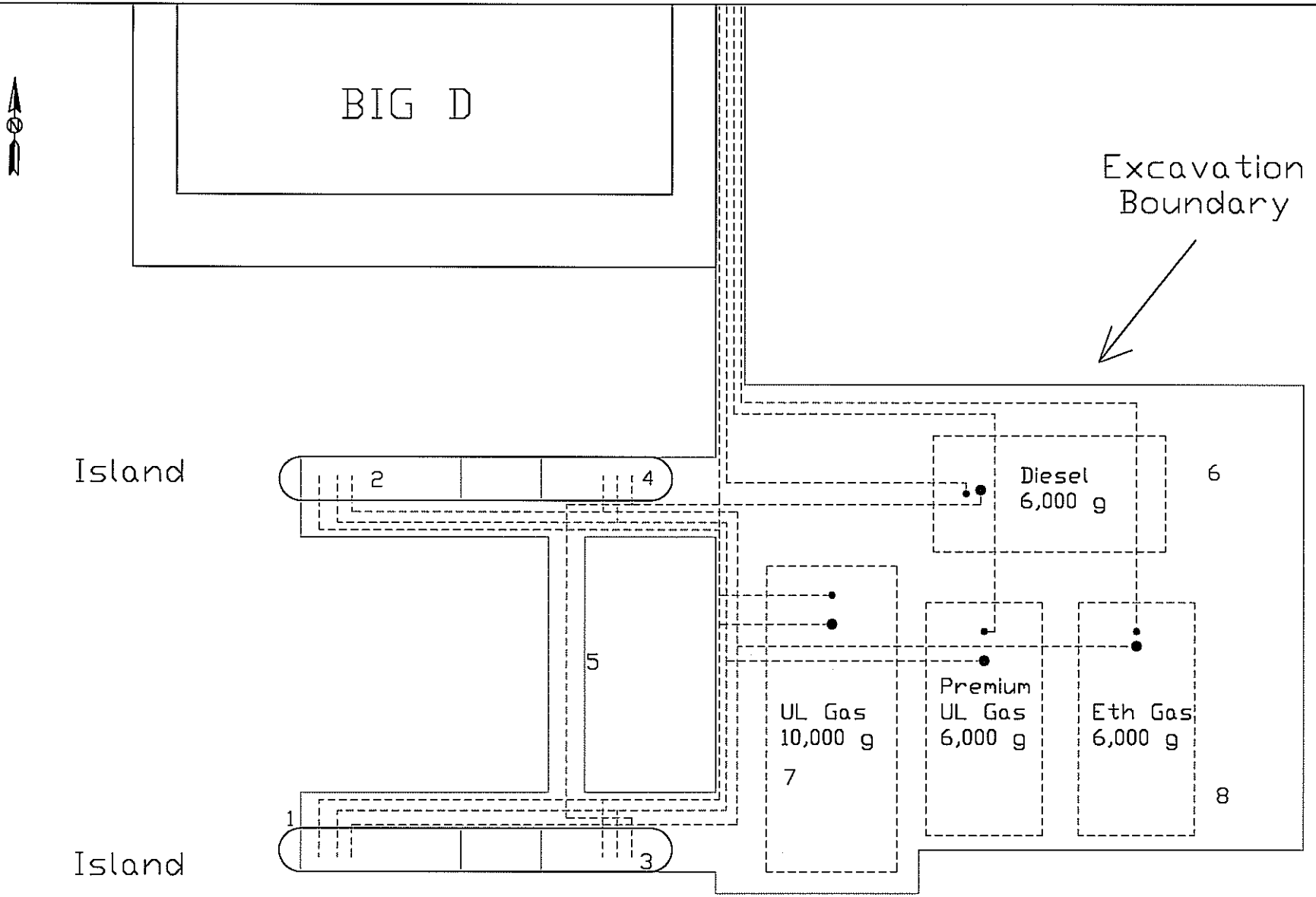
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #14	Figure 1
Topographic Site Location Map Big D Oil 2221 Lazelle Sturgis, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



TPSS# 14	FIGURE 2	Scale: 1"=30'
Big D Oil #1 2221 Lazelle Sturgis, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



TPSS# 14	FIGURE 3	Scale: 1"=10'
Big D Oil #1 2221 Lazelle Sturgis, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Sturgis Tank Pathology
Lab ID: R04060380-001
Client Sample ID: Sturgis-West Island-3'

Report Date: 07/21/04
Collection Date: 06/24/04 16:00
Date Received: 06/25/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:08/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:08/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:08/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:08/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:08/SN
Naphthalene	0.58	mg/kg		0.20		1	SW8021B	06/29/04 19:08/SN
Surr: Trifluorotoluene	88.8	%REC			70-130		SW8021B	06/29/04 19:08/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	2	mg/kg	J	10		1	CA-LUFT	06/29/04 19:06/SN
Surr: Trifluorotoluene	91.9	%REC			60-150		CA-LUFT	06/29/04 19:06/SN
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	11	mg/kg		10	500	1	CA-LUFT	07/12/04 15:32/SN
Surr: o-Terphenyl	91.6	%REC			70-130		CA-LUFT	07/12/04 15:32/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Sturgis Tank Pathology
Lab ID: R04060380-002
Client Sample ID: Sturgis-North Island-3'

Report Date: 07/21/04
Collection Date: 06/24/04 15:30
Date Received: 06/25/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:41/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:41/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:41/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:41/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/29/04 19:41/SN
Naphthalene	0.04	mg/kg	J	0.20		1	SW8021B	06/29/04 19:41/SN
Surr: Trifluorotoluene	97.9	%REC			70-130		SW8021B	06/29/04 19:41/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/29/04 19:39/SN
Surr: Trifluorotoluene	103	%REC			60-150		CA-LUFT	06/29/04 19:39/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Sturgis Tank Pathology
Lab ID: R04060380-003
Client Sample ID: Sturgis-South Island-3'

Report Date: 07/21/04
Collection Date: 06/24/04 16:15
Date Received: 06/25/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:14/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:14/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:14/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:14/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:14/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:14/SN
Surr: Trifluorotoluene	99.8	%REC			70-130		SW8021B	06/29/04 20:14/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/29/04 20:12/SN
Surr: Trifluorotoluene	105	%REC			60-150		CA-LUFT	06/29/04 20:12/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Sturgis Tank Pathology
Lab ID: R04060380-004
Client Sample ID: Sturgis-East Island-3'

Report Date: 07/21/04
Collection Date: 06/24/04 15:15
Date Received: 06/25/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:47/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:47/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:47/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:47/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:47/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	06/29/04 20:47/SN
Surr: Trifluorotoluene	96.2	%REC			70-130		SW8021B	06/29/04 20:47/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/29/04 20:45/SN
Surr: Trifluorotoluene	101	%REC			60-150		CA-LUFT	06/29/04 20:45/SN
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10	500	1	CA-LUFT	07/12/04 16:12/SN
Surr: o-Terphenyl	88.7	%REC			70-130		CA-LUFT	07/12/04 16:12/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Sturgis Tank Pathology
Lab ID: R04060380-005
Client Sample ID: Sturgis-Middle Pipe-3'

Report Date: 07/21/04
Collection Date: 06/24/04 15:45
Date Received: 06/25/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10		1	CA-LUFT	07/12/04 16:52/SN
Naphthalene	ND	mg/kg		0.66		1	CA-LUFT	07/12/04 16:52/SN
Surr: o-Terphenyl	88.5	%REC			70-130		CA-LUFT	07/12/04 16:52/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Sturgis Tank Pathology
Lab ID: R04060380-006
Client Sample ID: Sturgis-Tanks E-13'

Report Date: 07/21/04
Collection Date: 06/25/04 15:20
Date Received: 06/25/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/29/04 22:57/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 22:57/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/29/04 22:57/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 22:57/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/29/04 22:57/SN
Naphthalene	0.62	mg/kg		0.20		1	SW8021B	06/29/04 22:57/SN
Surr: Trifluorotoluene	92.5	%REC			70-130		SW8021B	06/29/04 22:57/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/29/04 22:55/SN
Surr: Trifluorotoluene	96.5	%REC			60-150		CA-LUFT	06/29/04 22:55/SN
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10	500	1	CA-LUFT	07/12/04 17:32/SN
Surr: o-Terphenyl	85.1	%REC			70-130		CA-LUFT	07/12/04 17:32/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Sturgis Tank Pathology
Lab ID: R04060380-007
Client Sample ID: Sturgis-Tanks W-13'

Report Date: 07/21/04
Collection Date: 06/25/04 15:30
Date Received: 06/25/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		1.0		5	SW8021B	06/30/04 01:08/SN
Benzene	ND	mg/kg		1.0		5	SW8021B	06/30/04 01:08/SN
Toluene	0.24	mg/kg	J	1.0		5	SW8021B	06/30/04 01:08/SN
Ethylbenzene	ND	mg/kg		1.0		5	SW8021B	06/30/04 01:08/SN
Xylenes, Total	0.54	mg/kg	J	1.0		5	SW8021B	06/30/04 01:08/SN
Naphthalene	ND	mg/kg		1.0		5	SW8021B	06/30/04 01:08/SN
Surr: Trifluorotoluene	88.9	%REC			70-130		SW8021B	06/30/04 01:08/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	20	mg/kg	J	50		5	CA-LUFT	06/30/04 01:06/SN
Surr: Trifluorotoluene	92.6	%REC			60-150		CA-LUFT	06/30/04 01:06/SN
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	31	mg/kg		10	500	1	CA-LUFT	07/12/04 19:32/SN
Surr: o-Terphenyl	94.2	%REC			70-130		CA-LUFT	07/12/04 19:32/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Sturgis Tank Pathology
Lab ID: R04060380-008
Client Sample ID: Sturgis-Tanks S-13'

Report Date: 07/21/04
Collection Date: 06/25/04 15:40
Date Received: 06/25/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	06/29/04 23:30/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 23:30/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	06/29/04 23:30/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	06/29/04 23:30/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	06/29/04 23:30/SN
Naphthalene	0.06	mg/kg	J	0.20		1	SW8021B	06/29/04 23:30/SN
Surr: Trifluorotoluene	86.4	%REC			70-130		SW8021B	06/29/04 23:30/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	06/29/04 23:28/SN
Surr: Trifluorotoluene	89.4	%REC			60-150		CA-LUFT	06/29/04 23:28/SN
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	7.1	mg/kg	J	10	500	1	CA-LUFT	07/12/04 20:11/SN
Surr: o-Terphenyl	87.9	%REC			70-130		CA-LUFT	07/12/04 20:11/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

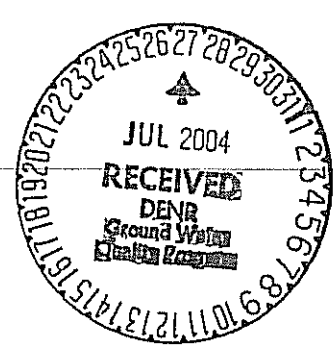
ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: Sturgis Tank Pathology

Report Date: 07/21/04
Work Order: R04060380

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2328
Sample ID: MB-2328	Method Blank								06/29/04 15:51
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	100	60	150			
Sample ID: LCSG-2328	Laboratory Control Sample - generic								06/29/04 16:56
TPH as Gasoline	210	mg/kg	10	104	60	140			
Surr: Trifluorotoluene			0.40	126	50	200			
Sample ID: R04060321-005AMS	Sample Matrix Spike								06/30/04 00:01
TPH as Gasoline	180	mg/kg	10	91	60	140			
Surr: Trifluorotoluene			0.40	111	60	150			
Sample ID: R04060321-005AMSD	Sample Matrix Spike Duplicate								06/30/04 00:33
TPH as Gasoline	180	mg/kg	10	90	60	140	1.1	20	
Surr: Trifluorotoluene			0.40	107	60	150			
Method: CA-LUFT									Batch: 2347
Sample ID: MB-2347	Method Blank								07/12/04 13:32
TPH as Fuel Oil	ND	mg/kg	10						
Naphthalene	ND	mg/kg	0.66						
Surr: o-Terphenyl			0.33	89.3	70	130			
Sample ID: LCS-2347	Laboratory Control Sample - generic								07/12/04 14:12
TPH as Fuel Oil	463	mg/kg	10	92.6	75	125			
Surr: o-Terphenyl			0.33	86.7	70	130			
Sample ID: LCSD-2347	Laboratory Control Sample Duplicate								07/12/04 14:51
TPH as Fuel Oil	497	mg/kg	10	99.4	75	125	7.1	20	
Surr: o-Terphenyl			0.33	90.3	70	130			
Sample ID: R04060380-006AMS	Sample Matrix Spike								07/12/04 18:12
TPH as Fuel Oil	480	mg/kg	10	96	75	125			
Surr: o-Terphenyl			0.33	88.2	70	130			
Sample ID: R04060380-006AMSD	Sample Matrix Spike Duplicate								07/12/04 18:52
TPH as Fuel Oil	456	mg/kg	10	91.2	75	125	5.1	20	
Surr: o-Terphenyl			0.33	86.7	70	130			



Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: Sturgis Tank Pathology

Report Date: 07/21/04
Work Order: R04060380

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: 2328
Sample ID: MB-2328	Method Blank								06/29/04 15:53
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	97	70	130			
Sample ID: LCSB-2328	Laboratory Control Sample - generic								06/29/04 17:53
Methyl tert-butyl ether (MTBE)	8.1	mg/kg	0.20	81.2	60	130			
Benzene	8.2	mg/kg	0.20	82.3	60	130			
Toluene	8.6	mg/kg	0.20	86.3	60	130			
Ethylbenzene	8.4	mg/kg	0.20	84.5	60	130			
Naphthalene	6.5	mg/kg	0.20	65	60	130			
Xylenes, Total	26	mg/kg	0.20	85.2	60	130			
Surr: Trifluorotoluene			0.20	98.3	60	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: Sturgis Tanks Pathology
Report Mail Address: DWR 2020 523 East Capitol Pierre SD 57501	Contact Name, Phone, Fax, E-mail: Terry 773 3296
Invoice Address: Same	Invoice Contact & Phone #:
	Purchase Order #:
	Sampler Name if other than Contact:

JUL 2004 RECEIVED DENR Ground and Surface Water Quality Program

ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐

Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Receipt Temp 9.1 °C

Cooler ID(s)

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegetation Bioassay Other / MATRIX	BTEX	TPH as Gasoline	TPH as diesel	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments:	LABORATORY USE ONLY
1	Sturgis - West Island - 3'	6/24/04	4:00p	1 S	X	X	X				0.0 ppm PID	R0460380-001
2	Sturgis - North Island - 3'	6/24/04	3:30p	1 S	X	X					0.0 ppm	002
3	Sturgis - South Island - 3'	6/24/04	4:15	1 S	X	X					0.0 ppm	003
4	Sturgis - East Island - 3'	6/24/04	3:15	1 S	X	X	X				1.0 ppm	004
5	Sturgis - Middle pipe - 3'	6/24/04	3:45	1 S			X				0.5 ppm	005
6	Sturgis - TANKS E - 13'	6/25/04	3:20	1 S	X	X	X				0.0 ppm PID	006
7	Sturgis - TANKS W - 13'	6/25/04	3:30	1 S	X	X	X				20. ppm	007
8	Sturgis - TANKS S - 13'	6/25/04	3:40	1 S	X	X	X				1.0 ppm	008
9				~~1~~ S								
10												

Custody Record MUST be Signed

Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 6-25-04 16:30
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: X

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	**15**	Contact :	Donald Policky II
Site Name:	Big D Oil	Address :	3685 Sturgis Road
Address:	305 West Jackson Blvd.	City :	Rapid City
City :	Spearfish	Phone :	605-342-6777
County :	Lawrence		

Legal Description of Property: Lot 1 & 2 Block 23, Lot 3 & N 25' Lot 4 Block 23 of Spearfish City

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☐	Documentation of storage system installations, replacements, and upgrades.	☐	☐	☐
☐	Dates of upgrades or replacement of the storage tank systems.	☐	☐	☐
☐	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☐	☒	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☒	Monthly release detection results.	☐	☒	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	2	6,000 gal	1	10,000 gal	1	12,000 gal
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Unknown
Tank Installation Date:	1968
Tank Installer Name:	Unknown

Piping Manufacturer Name:	Lily
Piping Installation Date:	Unknown
Piping Installer Name:	Unknown
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company :Grimms Pump & Tank	Phone Number: 605-342-6777
Name of Person(s) Performing Test: Rex Woitte	Tester Certification Number and Expiration Date: 1085.LTN 6-15-06
Manufacturer of Test Equipment / Model or Version: Accurite	
Equipment Threshold, GPH: .01 gph	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: 6-21-04	

Pressure Test																		Helium Test			
				Line Test Results																	
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	40	1.5"150'	1000	.001	.002											1032	P	1300	50	1400	P
2	40	1.5"150'	1530	.002	.004											1600	P	1400	50	1500	P
3	40	1.5"150'	1245	.001	.001											1320	P	1500	50	1600	P
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☒	Impressed Current System	☐	No Spill Containment
☐	Composite	☒	Internal Lining	☐	Unknown
☒	Unprotected Steel	☒	Single Wall		
☐	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☐	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☒	Flow Shut-Off
☐	Unknown	☐	Compartmented	☒	Tight Fill
☐	Other Approved	☒	Other two tanks manifoled together	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other sand - gravel				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☐	Dispenser Sump(s)
☐	Fiberglass	☒	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☒	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☒	Manifolded	☐	Unknown
☒	Pea Rock	☐	Bulk Product		
☐	Other	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☒	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 07 / 02/ 2004 month/day/year
Estimated number of gallons discharged: Unknown

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☒	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☒	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☒ Unknown
If so, what was the method relied upon for compliance purposes? No leaks identified during removal. Contamination believed to be from historical spills / overfills possibly before 1998 upgrade equipment was installed.

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☒	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☒	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:
Explanation:			

Cause of the Discharge

☐	Loose Component	☒	Spill	☐	Improper Installation
☐	Corrosion	☒	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other
Explanation:					

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

Tanks removed were from original installation. Piping has been upgraded. Tanks were upgraded with internal lining and impressed current. Some of the old piping was found when the system was removed. Large carbon anodes had been installed in conjunction with the impressed current protection. The system was found to be in generally good condition. Testing did not reveal any leaks. Upon removal, the tanks were found to be pitted but no holes observed. Contamination was noted in the tank basin, which could have been from historic spills or overfills. Soil was removed and disposed at the Rapid City landfill.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Spearfish Big D

Street Address: 305 West Jackson City: Spearfish

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	12,000	Unleaded Premium Gasoline	Good
2	10,000	Unleaded Ethanol Gasoline	Good
3	6,000	Unleaded Regular Gasoline	Good
4	6,000	Unleaded Regular Gasoline	Good

Piping

Was the piping removed at this site? Yes x No ____

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 2 Number of islands removed: 2

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes ____ No x If yes, at what depth? ____

Was free product encountered in the excavation? Yes ____ No x If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 102 Loose cubic yards of fill used: 310

Imported backfill consisting of silty clay was used to replace the tank volume.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basin had been backfilled with sand and pea rock, with alluvium sidewalls consisting of primarily of silt, sand, gravel, and cobbles to approximately 14 feet. Frequent cobbles were encountered in the base of the tank basin. Visible staining of the tank basin and soil below the trench backfill was observed, primarily in the areas where the PID documented the presence of organic vapors. The piping and tanks that comprised the existing tank system at this site were in good condition. The tanks had previously been cleaned and lined to meet 1998 upgrade standards. Visibly contaminated soils at this site appear to be the result of releases from the previous generation system.
PID screening detected organic-vapor concentrations up to 450.0 ppm near the islands and piping. Within the tank basin, the PID detected organic-vapor concentrations up to 500.0 ppm for visibly-contaminated soils associated with the west 6,000-gallon tank. After removal of visibly-contaminated soils associated with this tank, the highest PID within the tank basin was 59.0 ppm Laboratory analyses of soil samples indicated that petroleum-hydrocarbon concentrations exceed Tier 1 Action Levels only at the south pump island. Petroleum-hydrocarbon concentrations were well below Tier I Action levels for soil samples collected in the tank basin. As this site overlies and aquifer, additional assessment and possible cleanup appears to be warranted.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Terry Florentz Signature: ____ Date: ____

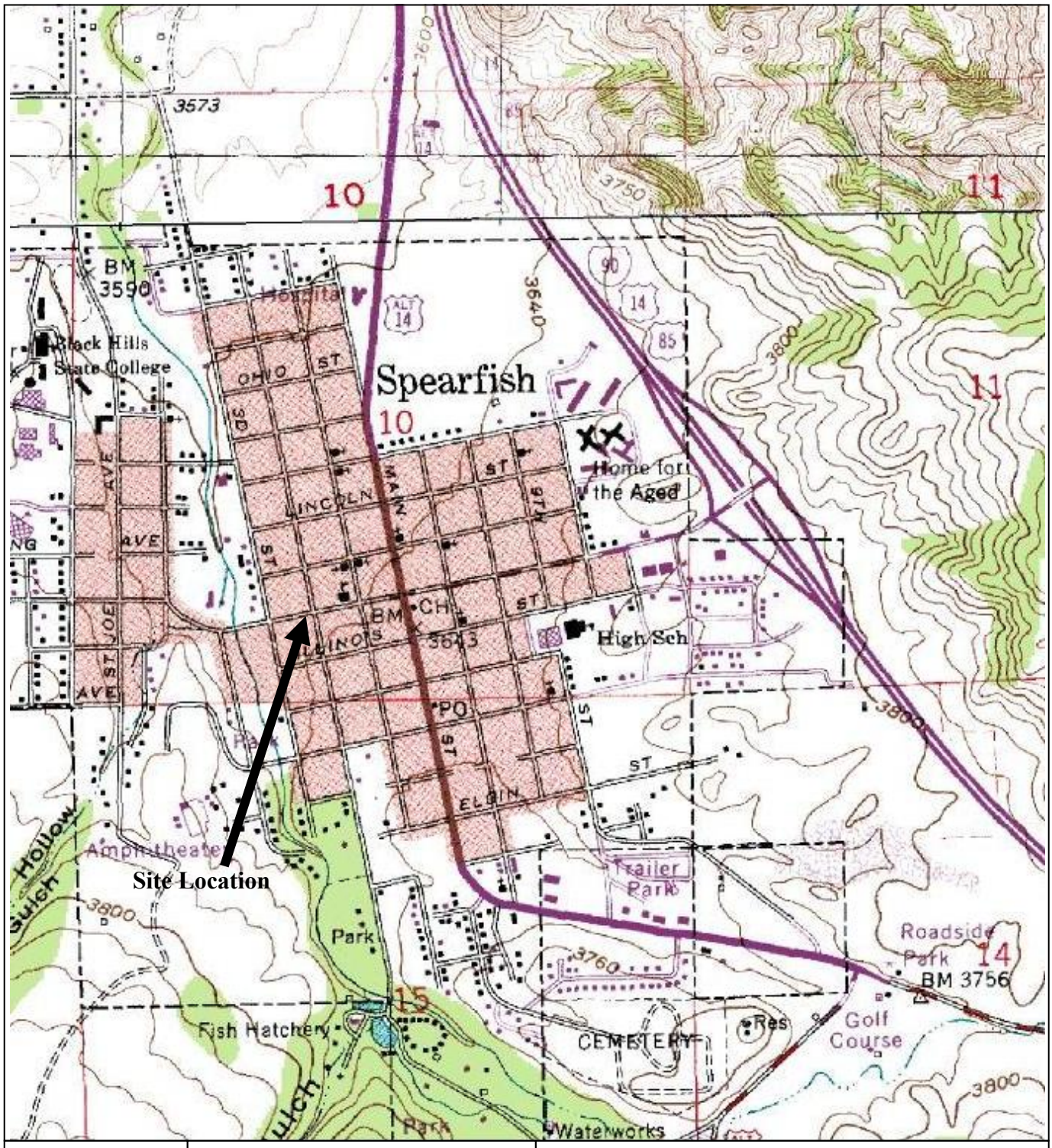
Table 1
PID Readings for Selected Soil Samples
Spearfish Big D
Spearfish, South Dakota

Sample ID	Location	Depth (ft)	PID
#1	North Island Piping	3	400.
#2	North Island Piping	3	240.
#3	North Island Piping	3	3.
#4	North Island Piping	3	0.0
#5	North Island Piping	3	0.5
#6	East Piping	3	0.0
#7	East Piping	3	350.
#8	East Piping	3	1.
#9	South Island Piping	3	11.
#10	South Island Piping	3	400.
#11	South Island Piping	3	450.
#12	Northwest Tank Basin	14	59.
#13	Southwest Tank Basin	13	3.
#14	Southeast Tank Basin	13	4.
#15	Northeast Tank Basin	13	3.5

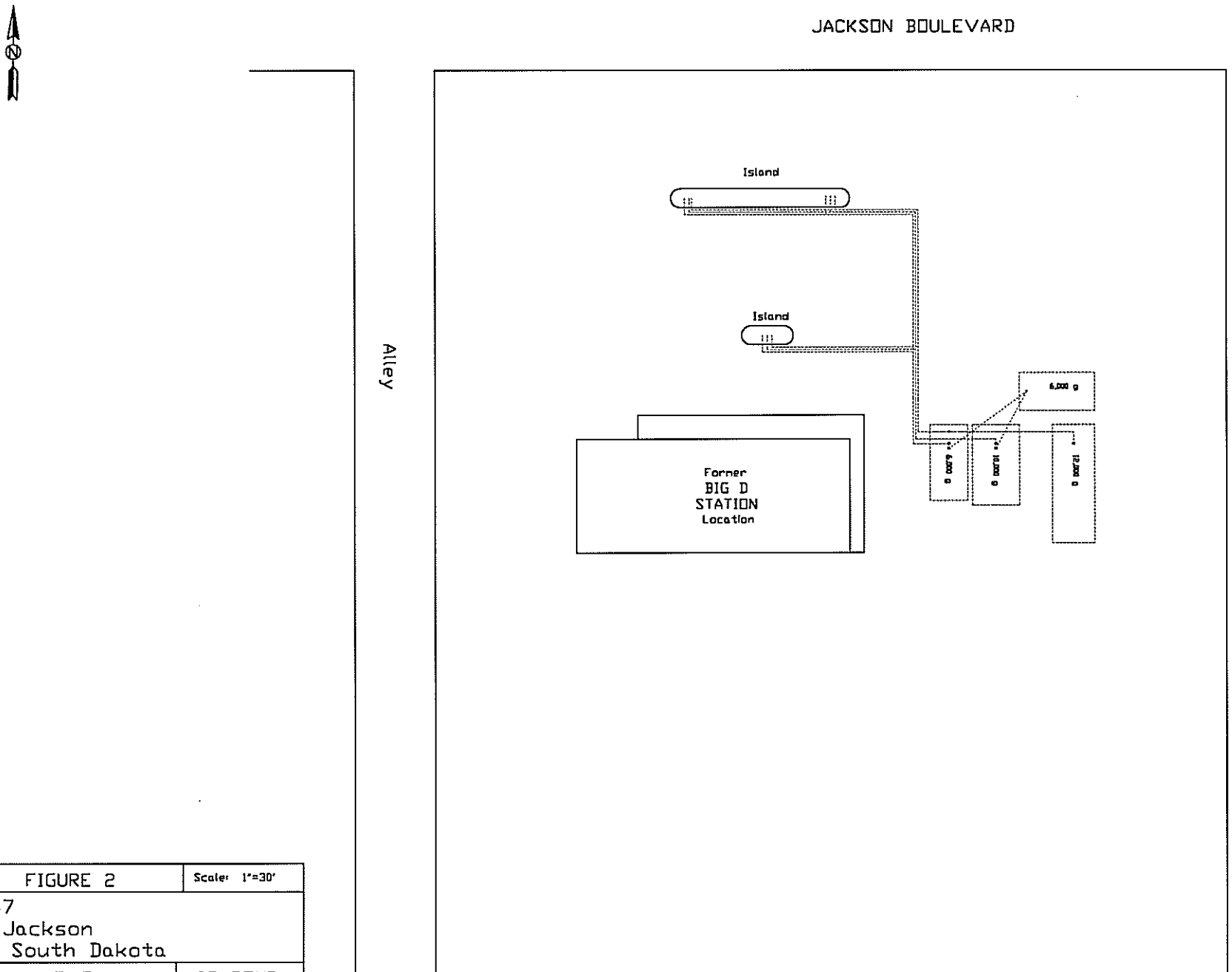
Table 2
Analytical Results for Soil Samples
Spearfish Big D
Spearfish, South Dakota

Sample ID	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Fuel Oil	Naphthalene
Spear Big D-Piping#1	< 0.2	< 0.2	0.78	4.7	420.	< 0.2		0.81
Spear Big D-Piping#4	< 0.2	0.09	< 0.2	0.36	18.	< 0.2		0.76
Spear Big D-Piping#7	< 2.0	< 2.0	< 2.0	2.2	170.	2.0		< 2.0
Spear Big D-Piping#9	< 0.2	< 0.2	< 0.2	< 0.2	9.	< 0.2		0.04
Spear Big D-Piping#11	**0.50**	**17.**	**25.**	203.	**6000.**	3.8		24.
Spear Big D-Landfarm	< 0.2	0.21	0.69	20.	**730.**	< 0.2		0.82
Spear Big D-Tanks NW-14'	< 0.2	< 0.2	0.05	0.38	87.	< 0.2		0.29
Spear Big D- Tanks SW-13'	< 0.2	< 0.2	< 0.2	< 0.2	2.	< 0.2		< 0.2
Spear Big D- Tanks SE-13'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
Spear Big D- Tanks NE-13'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
Tier 1 Action Levels	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**--**	**500.0**	**25.0**

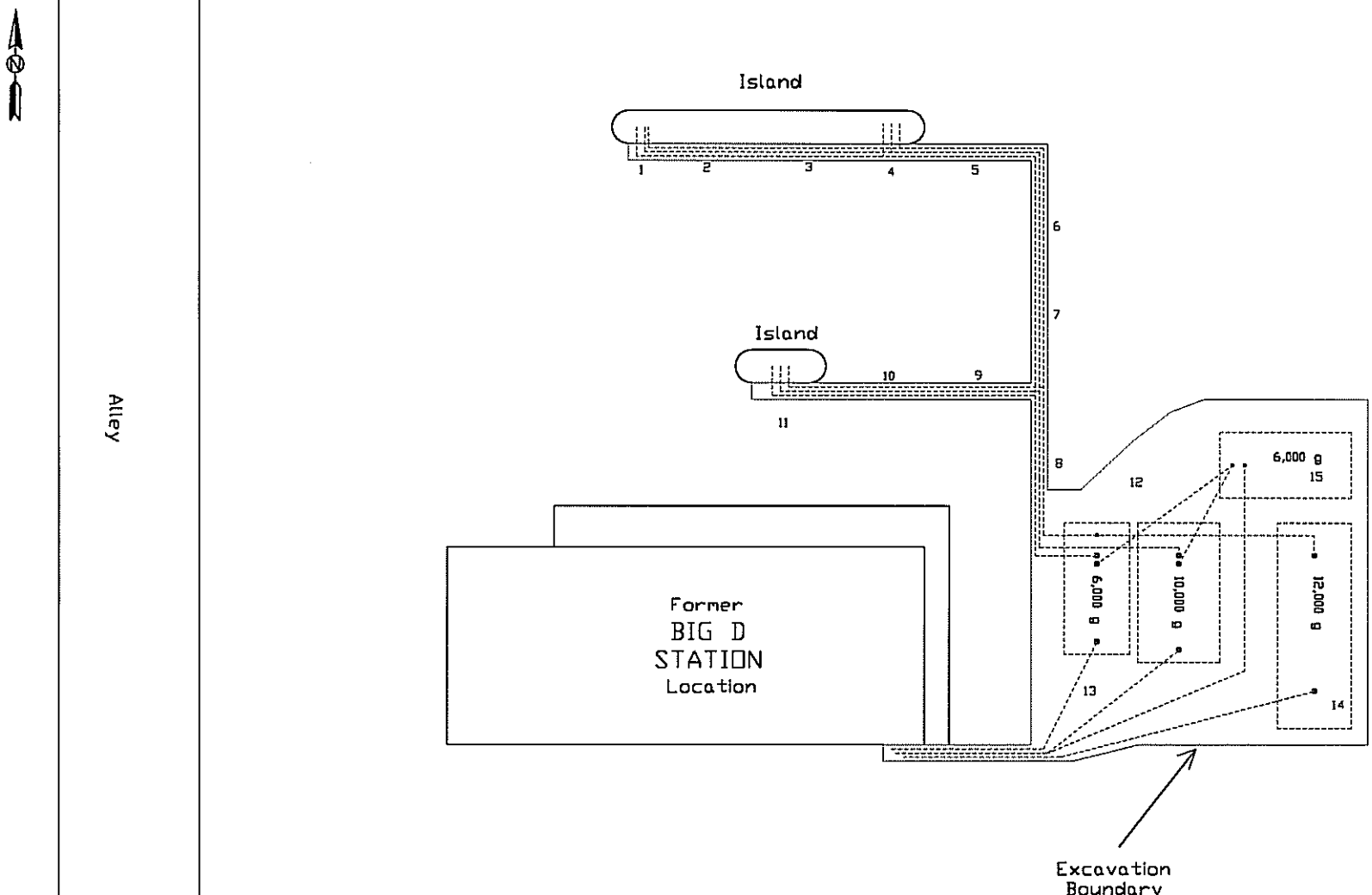
Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



TPSS #15	Figure 1
Topographic Site Location Map Big D Oil 305 W. Jackson Spearfish, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



TPSS# 15	FIGURE 2	Scale: 1"=30'
Big D Oil #7 305 West Jackson Spearfish, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		



TPSS# 15	FIGURE 3	Scale: 1"=20'
Big D Oil #7 305 West Jackson Spearfish, South Dakota		
DATE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-001
Client Sample ID: Spear Big D-Piping #1

Report Date: 07/16/04
Collection Date: 07/01/04 14:00
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/12/04 20:29/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 20:29/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/12/04 20:29/SN
Ethylbenzene	0.78	mg/kg		0.20		1	SW8021B	07/12/04 20:29/SN
Xylenes, Total	4.7	mg/kg		0.20		1	SW8021B	07/12/04 20:29/SN
Naphthalene	0.81	mg/kg		0.20		1	SW8021B	07/12/04 20:29/SN
Surr: Trifluorotoluene	116	%REC			70-130		SW8021B	07/12/04 20:29/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	420	mg/kg		10		1	CA-LUFT	07/12/04 20:28/SN
Surr: Trifluorotoluene	139	%REC			60-150		CA-LUFT	07/12/04 20:28/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-002
Client Sample ID: Spear Big D-Piping #4

Report Date: 07/16/04
Collection Date: 07/01/04 14:15
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/13/04 18:24/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/13/04 18:24/SN
Toluene	0.09	mg/kg	J	0.20		1	SW8021B	07/13/04 18:24/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/13/04 18:24/SN
Xylenes, Total	0.36	mg/kg		0.20		1	SW8021B	07/13/04 18:24/SN
Naphthalene	0.76	mg/kg		0.20		1	SW8021B	07/13/04 18:24/SN
Surr: Trifluorotoluene	112	%REC			70-130		SW8021B	07/13/04 18:24/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	18	mg/kg		10		1	CA-LUFT	07/13/04 18:24/SN
Surr: Trifluorotoluene	104	%REC			60-150		CA-LUFT	07/13/04 18:24/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-003
Client Sample ID: Spear Big D-Piping #7

Report Date: 07/16/04
Collection Date: 07/01/04 14:40
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		2.0		10	SW8021B	07/13/04 22:46/SN
Benzene	ND	mg/kg		2.0		10	SW8021B	07/13/04 22:46/SN
Toluene	ND	mg/kg		2.0		10	SW8021B	07/13/04 22:46/SN
Ethylbenzene	ND	mg/kg		2.0		10	SW8021B	07/13/04 22:46/SN
Xylenes, Total	2.2	mg/kg		2.0		10	SW8021B	07/13/04 22:46/SN
Naphthalene	ND	mg/kg		2.0		10	SW8021B	07/13/04 22:46/SN
Surr: Trifluorotoluene	109	%REC			70-130		SW8021B	07/13/04 22:46/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	170	mg/kg		100		10	CA-LUFT	07/13/04 22:45/SN
Surr: Trifluorotoluene	104	%REC			60-150		CA-LUFT	07/13/04 22:45/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-004
Client Sample ID: Spear Big D-Piping #9

Report Date: 07/16/04
Collection Date: 07/01/04 14:55
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/13/04 19:30/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/13/04 19:30/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/13/04 19:30/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/13/04 19:30/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/13/04 19:30/SN
Naphthalene	0.04	mg/kg	J	0.20		1	SW8021B	07/13/04 19:30/SN
Surr: Trifluorotoluene	108	%REC			70-130		SW8021B	07/13/04 19:30/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	9	mg/kg	J	10		1	CA-LUFT	07/13/04 19:29/SN
Surr: Trifluorotoluene	104	%REC			60-150		CA-LUFT	07/13/04 19:29/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-005
Client Sample ID: Spear Big D-Piping #11

Report Date: 07/16/04
Collection Date: 07/01/04 15:15
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	3.8	mg/kg		2.0		10	SW8021B	07/13/04 00:17/SN
Benzene	0.50	mg/kg	J	2.0		10	SW8021B	07/13/04 00:17/SN
Toluene	17	mg/kg		2.0		10	SW8021B	07/13/04 00:17/SN
Ethylbenzene	25	mg/kg		2.0		10	SW8021B	07/13/04 00:17/SN
Xylenes, Total	203	mg/kg		2.0		10	SW8021B	07/13/04 00:17/SN
Naphthalene	24	mg/kg		2.0		10	SW8021B	07/13/04 00:17/SN
Surr: Trifluorotoluene	130	%REC			70-130		SW8021B	07/13/04 00:17/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	6000	mg/kg		440		44	CA-LUFT	07/14/04 00:23/SN
Surr: Trifluorotoluene	130	%REC			60-150		CA-LUFT	07/14/04 00:23/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-006
Client Sample ID: Spear Big D-Landfarm

Report Date: 07/16/04
Collection Date: 07/01/04 13:30
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL METALS ANALYSES								
Lead	11	mg/kg		1		2	SW6010B	07/16/04 12:02/LJH
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/09/04 11:43/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/09/04 11:43/SN
Toluene	0.21	mg/kg		0.20		1	SW8021B	07/09/04 11:43/SN
Ethylbenzene	0.69	mg/kg		0.20		1	SW8021B	07/09/04 11:43/SN
Xylenes, Total	20	mg/kg		0.20		1	SW8021B	07/09/04 11:43/SN
Naphthalene	0.82	mg/kg		0.20		1	SW8021B	07/09/04 11:43/SN
Surr: Trifluorotoluene	145	%REC	S		70-130		SW8021B	07/09/04 11:43/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	730	mg/kg		10		1	CA-LUFT	07/09/04 11:43/SN
Surr: Trifluorotoluene	145	%REC			60-150		CA-LUFT	07/09/04 11:43/SN

- S=Surrogate recovery outside QC advisory limits due to sample matrix interference.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-010
Client Sample ID: Spear Big D-Tanks NW-14'

Report Date: 07/16/04
Collection Date: 07/02/04 16:45
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:44/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:44/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:44/SN
Ethylbenzene	0.05	mg/kg	J	0.20		1	SW8021B	07/12/04 23:44/SN
Xylenes, Total	0.38	mg/kg		0.20		1	SW8021B	07/12/04 23:44/SN
Naphthalene	0.29	mg/kg		0.20		1	SW8021B	07/12/04 23:44/SN
Surr: Trifluorotoluene	108	%REC			70-130		SW8021B	07/12/04 23:44/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	87	mg/kg		10		1	CA-LUFT	07/12/04 23:44/SN
Surr: Trifluorotoluene	106	%REC			60-150		CA-LUFT	07/12/04 23:44/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-008
Client Sample ID: Spear Big D-Tanks SW-13'

Report Date: 07/16/04
Collection Date: 07/02/04 16:20
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/13/04 21:40/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/13/04 21:40/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/13/04 21:40/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/13/04 21:40/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/13/04 21:40/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	07/13/04 21:40/SN
Surr: Trifluorotoluene	112	%REC			70-130		SW8021B	07/13/04 21:40/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	2	mg/kg	J	10		1	CA-LUFT	07/13/04 21:40/SN
Surr: Trifluorotoluene	102	%REC			60-150		CA-LUFT	07/13/04 21:40/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-009
Client Sample ID: Spear Big D-Tanks SE-13'

Report Date: 07/16/04
Collection Date: 07/02/04 16:35
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:12/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:12/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:12/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:12/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:12/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	07/12/04 23:12/SN
Surr: Trifluorotoluene	110	%REC			70-130		SW8021B	07/12/04 23:12/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	07/12/04 23:11/SN
Surr: Trifluorotoluene	102	%REC			60-150		CA-LUFT	07/12/04 23:11/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology Spearfish Big D
Lab ID: R04070104-007
Client Sample ID: Spear Big D-Tank NE-13'

Report Date: 07/16/04
Collection Date: 07/02/04 14:30
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/13/04 20:35/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/13/04 20:35/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/13/04 20:35/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/13/04 20:35/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/13/04 20:35/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	07/13/04 20:35/SN
Surr: Trifluorotoluene	111	%REC			70-130		SW8021B	07/13/04 20:35/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	07/13/04 20:34/SN
Surr: Trifluorotoluene	102	%REC			60-150		CA-LUFT	07/13/04 20:34/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

QA/QC Summary Report

Client: SD DENR
Project: Tank Pathology Spearfish Big D

Report Date: 07/16/04
Work Order: R04070104

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2354
Sample ID: MB-2354	Method Blank								07/12/04 14:02
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	98.3	60	150			
Sample ID: LCSG-2354	Laboratory Control Sample - generic								07/12/04 15:08
TPH as Gasoline	200	mg/kg	10	99.5	60	140			
Surr: Trifluorotoluene			0.40	107	50	200			
Sample ID: R04070103-006AMS	Sample Matrix Spike								07/13/04 02:59
TPH as Gasoline	200	mg/kg	10	99	60	140			
Surr: Trifluorotoluene			0.40	143	60	150			
Sample ID: R04070103-006AMSD	Sample Matrix Spike Duplicate								07/13/04 03:32
TPH as Gasoline	240	mg/kg	10	118	60	140	18	20	
Surr: Trifluorotoluene			0.40	151	60	150			S
Method: CA-LUFT									Analytical Run: GCPID1-R_040712A
Sample ID: CCV_0712hp430r-S	Continuing Calibration Verification Standard								07/13/04 11:38
TPH as Gasoline	25	mg/kg	10	125	75	125			
Surr: Trifluorotoluene			0.40	104	50	150			
Method: CA-LUFT									Analytical Run: GCPID1-R_040709A
Sample ID: CCV_0709hp402r-S	Continuing Calibration Verification Standard								07/09/04 10:09
TPH as Gasoline	18	mg/kg	10	90	75	125			
Surr: Trifluorotoluene			0.40	106	50	150			
Method: SW6010B									Batch: 2367
Sample ID: MB040196-02	Method Blank								07/16/04 11:43
Lead	ND	mg/kg	1.0						
Sample ID: R04070103-002ADUP	Sample Duplicate								07/16/04 11:55
Lead	3.3	mg/kg	1.0				3.1	15	
Sample ID: R04070104-006AMS	Sample Matrix Spike								07/16/04 12:10
Lead	58	mg/kg	1.0	81.4	75	125			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: SD DENR
Project: Tank Pathology Spearfish Big D

Report Date: 07/16/04
Work Order: R04070104

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: 2354
Sample ID: MB-2354	Method Blank								07/12/04 14:03
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	106	70	130			
Sample ID: LCSB-2354	Laboratory Control Sample - generic								07/12/04 14:36
Methyl tert-butyl ether (MTBE)	8.8	mg/kg	0.20	87.6	60	130			
Benzene	8.9	mg/kg	0.20	89.2	60	130			
Toluene	9.2	mg/kg	0.20	91.6	60	130			
Ethylbenzene	8.9	mg/kg	0.20	89.2	60	130			
Naphthalene	7.0	mg/kg	0.20	69.8	60	130			
Xylenes, Total	27	mg/kg	0.20	89.6	60	130			
Surr: Trifluorotoluene			0.20	102	60	130			
Method: SW8021B									Analytical Run: GCPID1-R_040712A
Sample ID: CCV_0712hp433r-S	Continuing Calibration Verification Standard								07/13/04 17:52
m+p-Xylenes	21	mg/kg	0.20	105	85	115			
o-Xylene	11	mg/kg	0.20	110	85	115			
Methyl tert-butyl ether (MTBE)	10	mg/kg	0.20	100	85	115			
Benzene	11	mg/kg	0.20	110	85	115			
Toluene	11	mg/kg	0.20	110	85	115			
Ethylbenzene	11	mg/kg	0.20	110	85	115			
Naphthalene	11	mg/kg	0.20	110	85	115			
Surr: Trifluorotoluene			0.20	124	85	115			S
Method: SW8021B									Analytical Run: GCPID1-R_040709A
Sample ID: CCV_0709hp401r-S	Continuing Calibration Verification Standard								07/09/04 09:37
m+p-Xylenes	22	mg/kg	0.20	110	85	115			
o-Xylene	12	mg/kg	0.20	120	85	115			S
Methyl tert-butyl ether (MTBE)	11	mg/kg	0.20	110	85	115			
Benzene	12	mg/kg	0.20	120	85	115			S
Toluene	12	mg/kg	0.20	120	85	115			S
Ethylbenzene	12	mg/kg	0.20	120	85	115			S
Naphthalene	9.9	mg/kg	0.20	99.3	85	115			
Surr: Trifluorotoluene			0.20	61.6	85	115			S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: Tank Pathology Spearfish Big D	
Report Mail Address: 523 East Capitol Pierre SD	Contact Name, Phone, Fax, E-mail: Terry 773 3296	Sampler Name if other than Contact:
Invoice Address:	Invoice Contact & Phone #:	Purchase Order #:

JUL 2004 RECEIVED DENR Ground Water Quality Program

ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Receipt Temp 8.1 °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegetation Bioassay Other / MATRIX	BTEX	TPH as gasoline	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments:	LABORATORY USE ONLY Lab ID
1	Spear Big D - Piping #1	7/1/04	2:00p	1 S	X	X		✓			C04070104-001A
2	Spear Big D - Piping #4	7/1/04	2:15p	1 S	X	X		✓			002A
3	Spear Big D - Piping #7	7/1/04	2:40	1 S	X	X		✓			003A
4	Spear Big D - Piping #9	7/1/04	2:55	1 S	X	X		✓			004A
5	Spear Big D - Piping #11	7/1/04	3:15	1 S	X	X		✓			005A
6	Spear Big D - Landfarm	7/1/04	1:30p	1 S	X	X			X	RUSH ASAP	006A
7	Spear Big D - TANK NE-13'	7/2/04	2:30p	1 S	X	X		✓			007A
8	Spear Big D - TANKS SW-13'	7/2/04	4:20p	1 S	X	X		✓			008A
9	Spear Big D - TANKS SE-13'	7/2/04	4:35p	1 S	X	X		✓			009A
10	Spear Big D - TANKS NW-14'	7/2/04	4:45p	1 S	X	X		✓			010A

Custody Record MUST be Signed

Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 7-8-04 16:00
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: X

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	**16**	Contact :	Bob Thyren
Site Name:	Big D Oil	Address :	3685 Sturgis Road
Address:	234 Main Gate Road	City :	Rapid City SD 57709
City :	Box Elder	Phone :	(605) 342-6777
County :	Pennington		

Legal Description of Property: South one hundred and fourteen and five tenth feet of Tract C of the Northeast Quarter of the South East Quarter in Section eighteen, Township 2 North, Range 9 east, BHM, City of Box Elder

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☐	Documentation of storage system installations, replacements, and upgrades.	☐	☐	☐
☐	Dates of upgrades or replacement of the storage tank systems.	☐	☐	☐
☒	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☐	☒	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☒	☐	☐
☒	Electronic release detection equipment monthly function checks.	☒	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☒	Monthly release detection results.	☒	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☒	Results of tightness, pressure, and integrity tests.	☒	☐	☐
☐	SD DENR Inspection Records	☐	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	3	10,000 gal				
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☒	New at Install	☐	Used at Install	☐	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Eaton - Denver Tank
Tank Installation Date:	1985
Tank Installer Name:	Unknown

Piping Manufacturer Name:	Unknown & Lily
Piping Installation Date:	1985 and 1987
Piping Installer Name:	Unknown

Notes

These were painted steel tanks. As the tanks were exposed and moisture evaporated from the exteriaor the coating began to flake off - particularly the ends. Around tank fills the coating was blistered and these blisters contained fluid apparently petroleum.

The piping was a mix of bare and coated steel. The bare steel had been cathodically protected.

LINE TIGHTNESS TEST REPORT FORM

Testing Company :Grimm's Pump and Industrial Supply	Phone Number: (605) 342-6777
Name of Person(s) Performing Test: Bruce Morgan	Tester Certification Number and Expiration Date: 1089.LTN 6-15-06
Manufacturer of Test Equipment / Model or Version: Hasstech ACURITE Pipeline Tester	
Equipment Threshold, GPH: .01	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: 7-6-04	

Pressure Test																		Helium Test			
				Line Test Results																	
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	50	1.5"/ 150'	1055	2		2										1125	P	1530	50	1600	P
2	50	1.5"/ 150'	1225	1		2										1255	P	1615	50	1645	P
3	50	1.5" /150'	1355	1		2										1445	P	1700	50	1730	P
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☐	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☒	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other (crushed rock)				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☒	Sacrificial Anodes	☐	Dispenser Sump(s)
☐	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☒	Composite	☒	Single Wall	☐	Unknown
☒	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☒	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other (crushed rock)	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☒	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 07/13/2004month/day/year
Estimated number of gallons discharged: unknown

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☒	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☒	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☒ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☒	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:

Explanation:

Cause of the Discharge

☐	Loose Component	☐	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☒	Unknown
				☐	Other

Explanation:

As the the backfill was removed the native soil walls of the tank basin were exposed. These walls were visually contaminated and had an older contamination odor. Upon investigation this contamination was found below the tank backfill. Abandoned product lines were also observed in the sides of the excavation. We concluded that the previous system leaked but had not been remediated.

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☒	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This property had been the site a of gas station for many years. The earlier buildings had been razed and the current structure built in 1985. Apparently the current tank system had been installed near the location of the former tanks due to the presence of a significant amount of contamination found within the walls and floor of the tank basin.

No leaks or spills associated with the studied system were found. The shipping covers had not been removed from two tank anodes. As noted above, the tank coating had been penetrated and loosened by water and product. Bare steel piping was in good condition as was the composite coated piping which had some wrench marks.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Box Elder Big D, Villa Ranchero

Street Address: 234 Main Gate Road (Liberty Blvd) City: Box Elder

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	10,000	Unleaded Premium Gasoline	Good
2	10,000	Unleaded Regular Gasoline	Good
3	10,000	Unleaded Ethanol Gasoline	Good

Piping

Was the piping removed at this site? Yes x No ____

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 4 Number of islands removed: 4

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes _____ No x If yes, at what depth? _____

Was free product encountered in the excavation? Yes _____ No x If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 220 Loose cubic yards of fill used: 400

Imported backfill consisting of silty clay was used to replace the tank volume.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The piping and tanks that comprised the existing tank system at this site were in good condition. The coating material on the three tanks exhibited poor adhesion. The coating of each tank appeared blistered along the longitudinal tank walls, with large areas of coating flaked off the ends of the tanks. The poor coating adhesion did not appear to have significantly affected the protection of the tank from corrosion. The primer beneath the coating was intact with little or no corrosion of the underlying steel.

The tank basin had been backfilled with sand and pea rock, with alluvium sidewalls consisting of primarily of silt, sand, gravel, and cobbles to approximately 14 feet. Visible staining of the tank basin and soil below the trench backfill was observed, primarily in the areas where the PID documented the presence of organic vapors. Visibly-contaminated soils encountered within the tank basin at this site may have resulted from overfills or releases from the previous generation system. The PID data from the piping and island areas indicate that more recent releases may have occurred at the dispensers and/or unions. While the excavation of soils in the tank basin appeared to adequately remove soils in excess of Tier 1 Action Levels adjacent to the tanks, significant petroleum-hydrocarbon concentrations remain near the southwest dispenser island. As Tier 1 Action Levels were exceeded, additional assessment will be necessary.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Terry Florentz Signature: _____ Date: _____

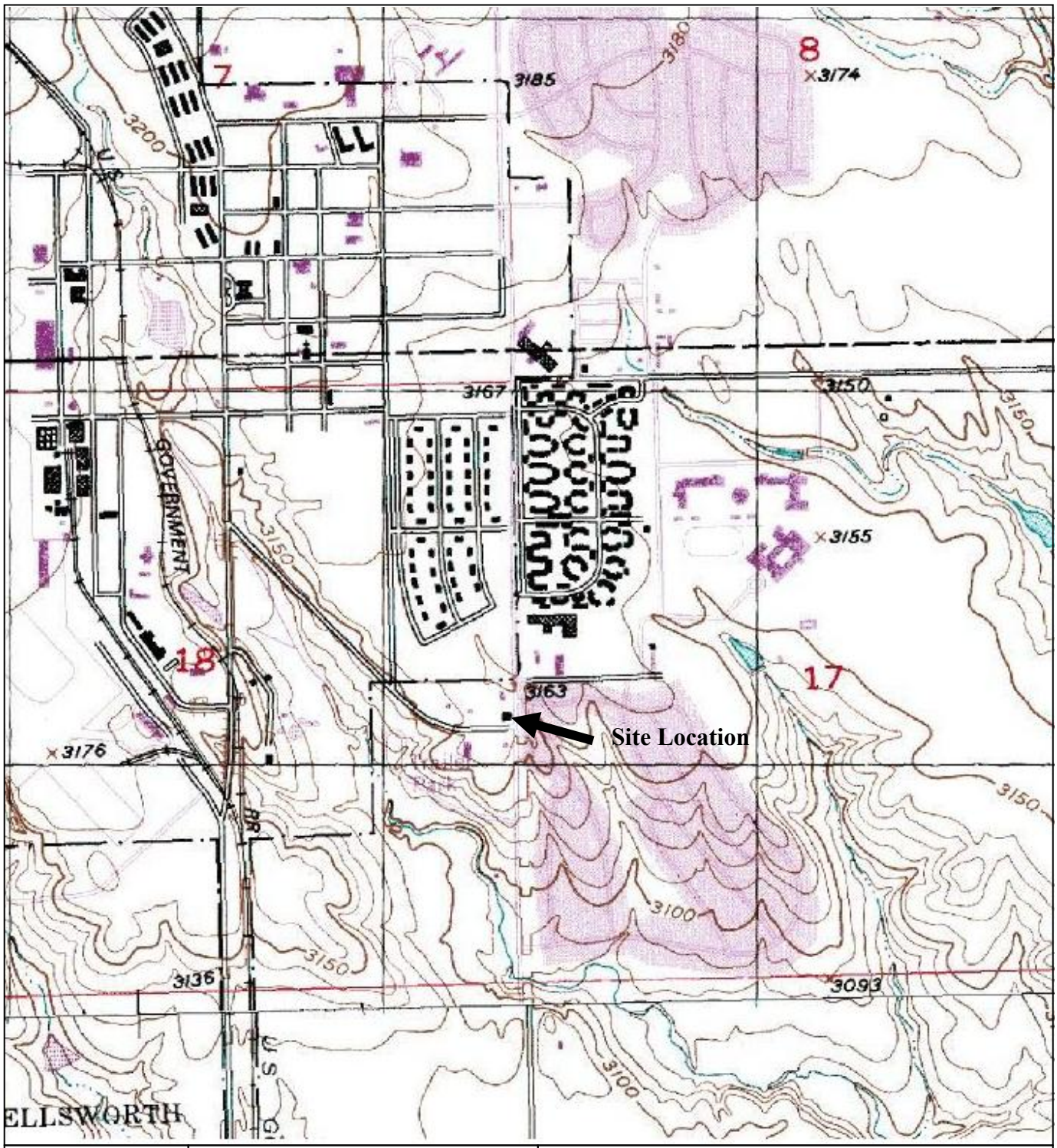
Table 1
PID Readings for Selected Soil Samples
Main Gate Big D
Box Elder, South Dakota

Sample ID	Location	Depth (ft)	PID
#1	Northwest Island	3	35.
#2	Southwest Island	3	400.
#3	Middle Piping Run	3	55.
#4	Southeast Island	3	15.
#5	Northeast Island	3	5.
#6	Tank Basin, North Wall	11	0.0
#7	Tank Basin, Northeast Bottom	16	120.
#8	Tank Basin, Southeast Bottom	15	360.
#9	Tank Basin, South Wall	11	800.
#10	Tank Basin, Northwest Wall	12	870.
#11	Tank Basin, East Wall	9	0.0
#12	Tank Basin, East Wall	12	337.

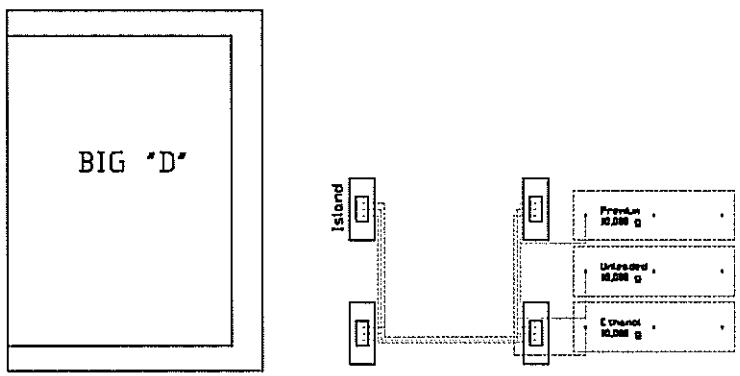
Table 2
Analytical Results for Soil Samples
Main Gate Big D
Box Elder, South Dakota

Sample ID	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Fuel Oil	Naphthalene
#1) BEMain-NW Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	2.	< 0.2		0.05
#2) BEMain-SW Island-3'	**< 8.8**	**45.**	**47.**	**383.**	**5100.**	< 8.8		20.
#3) BEMain-MidPiping-3'	< 0.2	< 0.2	< 0.2	< 0.2	2.	< 0.2		0.05
#4) BEMain-SE Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	13.	< 0.2		0.07
#5) BEMain-NE Island-3'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#6) BEMain-North-11'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#7)BEMainGate-NE Base-16'	< 0.2	< 0.2	< 0.2	< 0.2	2.	< 0.2		0.05
#8)BEMainGate-SE Base-15'	0.09	< 0.2	< 0.2	< 0.2	2.	< 0.2		< 0.2
#9) BEMainGate-SE-11'	< 2.0	0.63	0.92	1.4	300.	< 2.0		0.77
#10) BEMainGate-NW-12'	< 0.2	< 0.2	< 0.2	< 0.2	7.	< 0.2		0.04
#11) BEMainGate-East-9'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#12) BEMainGate-East-12'	< 0.2	< 0.2	0.12	0.14	39.	< 0.2		< 0.2
Tier 1 Action Levels	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**--**	**500.0**	**25.0**

Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)



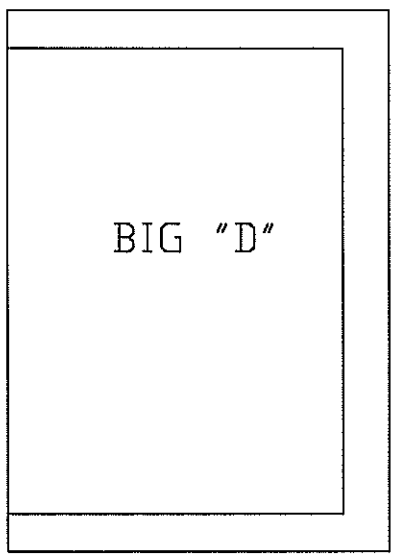
TPSS #16	Figure 1
Topographic Site Location Map Big D Oil Ellsworth AFB Box Elder, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**

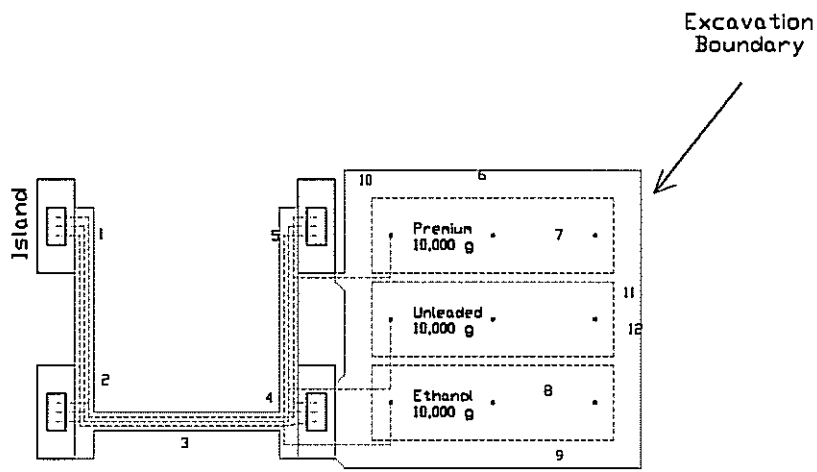


ELLSWORTH ROAD

LIBERTY/MAIN GATE BOULEVARD

PSS# 16	FIGURE 2	Scale: 1"=30'
Big D #15 234 Main Gate Road (Liberty Blvd) Box Elder, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz SD DENR	
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		





PSS# 16	FIGURE 3	Scale: 1"=20'
Big D #15 234 Main Gate Road (Liberty Blvd) Box Elder, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04070103-004
Client Sample ID: BE Main-NW Island-3'

Report Date: 07/16/04
Collection Date: 07/08/04 14:30
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:50/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:50/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:50/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:50/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:50/SN
Naphthalene	0.05	mg/kg	J	0.20		1	SW8021B	07/12/04 18:50/SN
Surr: Trifluorotoluene	110	%REC			70-130		SW8021B	07/12/04 18:50/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	2	mg/kg	J	10		1	CA-LUFT	07/12/04 18:50/SN
Surr: Trifluorotoluene	103	%REC			60-150		CA-LUFT	07/12/04 18:50/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04070103-002
Client Sample ID: BE Main-SW Island-3'

Report Date: 07/16/04
Collection Date: 07/08/04 14:10
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL METALS ANALYSES								
Lead	3	mg/kg		1		2	SW6010B	07/16/04 11:47/LJH
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		8.8		44	SW8021B	07/09/04 12:49/SN
Benzene	ND	mg/kg		8.8		44	SW8021B	07/09/04 12:49/SN
Toluene	45	mg/kg		8.8		44	SW8021B	07/09/04 12:49/SN
Ethylbenzene	47	mg/kg		8.8		44	SW8021B	07/09/04 12:49/SN
Xylenes, Total	383	mg/kg		8.8		44	SW8021B	07/09/04 12:49/SN
Naphthalene	20	mg/kg		8.8		44	SW8021B	07/09/04 12:49/SN
Surr: Trifluorotoluene	115	%REC			70-130		SW8021B	07/09/04 12:49/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	5100	mg/kg		440		44	CA-LUFT	07/09/04 12:48/SN
Surr: Trifluorotoluene	115	%REC			60-150		CA-LUFT	07/09/04 12:48/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04070103-003
Client Sample ID: BE Main-Mid Piping-3'

Report Date: 07/16/04
Collection Date: 07/08/04 14:20
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:18/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:18/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:18/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:18/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/12/04 18:18/SN
Naphthalene	0.05	mg/kg	J	0.20		1	SW8021B	07/12/04 18:18/SN
Surr: Trifluorotoluene	110	%REC			70-130		SW8021B	07/12/04 18:18/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	2	mg/kg	J	10		1	CA-LUFT	07/12/04 18:17/SN
Surr: Trifluorotoluene	103	%REC			60-150		CA-LUFT	07/12/04 18:17/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04070103-001
Client Sample ID: BE Main-SE Island-3'

Report Date: 07/16/04
Collection Date: 07/08/04 14:00
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/12/04 17:45/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 17:45/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/12/04 17:45/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 17:45/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/12/04 17:45/SN
Naphthalene	0.07	mg/kg	J	0.20		1	SW8021B	07/12/04 17:45/SN
Surr: Trifluorotoluene	131	%REC	S		70-130		SW8021B	07/12/04 17:45/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	13	mg/kg		10		1	CA-LUFT	07/12/04 17:45/SN
Surr: Trifluorotoluene	120	%REC			60-150		CA-LUFT	07/12/04 17:45/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04070103-005
Client Sample ID: BE Main-NE Island-3'

Report Date: 07/16/04
Collection Date: 07/08/04 14:40
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:23/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:23/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:23/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:23/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:23/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:23/SN
Surr: Trifluorotoluene	109	%REC			70-130		SW8021B	07/12/04 19:23/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	07/12/04 19:23/SN
Surr: Trifluorotoluene	102	%REC			60-150		CA-LUFT	07/12/04 19:23/SN

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Tank Pathology
Lab ID: R04070103-006
Client Sample ID: BE Main-North-11'

Report Date: 07/16/04
Collection Date: 07/08/04 15:40
Date Received: 07/08/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:56/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:56/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:56/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:56/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:56/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	07/12/04 19:56/SN
Surr: Trifluorotoluene	110	%REC			70-130		SW8021B	07/12/04 19:56/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	07/12/04 19:55/SN
Surr: Trifluorotoluene	102	%REC			60-150		CA-LUFT	07/12/04 19:55/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: SD DENR
Project: Tank Pathology

Report Date: 07/16/04
Work Order: R04070103

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2354
Sample ID: MB-2354	Method Blank								07/12/04 14:02
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	98.3	60	150			
Sample ID: LCSG-2354	Laboratory Control Sample - generic								07/12/04 15:08
TPH as Gasoline	200	mg/kg	10	99.5	60	140			
Surr: Trifluorotoluene			0.40	107	50	200			
Sample ID: R04070103-006AMS	Sample Matrix Spike								07/13/04 02:59
TPH as Gasoline	200	mg/kg	10	99	60	140			
Surr: Trifluorotoluene			0.40	143	60	150			
Sample ID: R04070103-006AMSD	Sample Matrix Spike Duplicate								07/13/04 03:32
TPH as Gasoline	240	mg/kg	10	118	60	140	18	20	
Surr: Trifluorotoluene			0.40	151	60	150			S
Method: CA-LUFT									Analytical Run: GCPID1-R_040709A
Sample ID: CCV_0709hp402r-S	Continuing Calibration Verification Standard								07/09/04 10:09
TPH as Gasoline	18	mg/kg	10	90	75	125			
Surr: Trifluorotoluene			0.40	106	50	150			
Method: SW6010B									Batch: 2367
Sample ID: MB040196-02	Method Blank								07/16/04 11:43
Lead	ND	mg/kg	1.0						
Sample ID: R04070103-002ADUP	Sample Duplicate								07/16/04 11:55
Lead	3.3	mg/kg	1.0				3.1	15	
Sample ID: R04070104-006AMS	Sample Matrix Spike								07/16/04 12:10
Lead	58	mg/kg	1.0	81.4	75	125			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: Tank Pathology

Report Date: 07/16/04
Work Order: R04070103

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: 2354
Sample ID: MB-2354	Method Blank								07/12/04 14:03
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	106	70	130			
Sample ID: LCSB-2354	Laboratory Control Sample - generic								07/12/04 14:36
Methyl tert-butyl ether (MTBE)	8.8	mg/kg	0.20	87.6	60	130			
Benzene	8.9	mg/kg	0.20	89.2	60	130			
Toluene	9.2	mg/kg	0.20	91.6	60	130			
Ethylbenzene	8.9	mg/kg	0.20	89.2	60	130			
Naphthalene	7.0	mg/kg	0.20	69.8	60	130			
Xylenes, Total	27	mg/kg	0.20	89.6	60	130			
Surr: Trifluorotoluene			0.20	102	60	130			
Method: SW8021B									Analytical Run: GCPID1-R_040709A
Sample ID: CCV_0709hp401r-S	Continuing Calibration Verification Standard								07/09/04 09:37
m+p-Xylenes	22	mg/kg	0.20	110	85	115			
o-Xylene	12	mg/kg	0.20	120	85	115			S
Methyl tert-butyl ether (MTBE)	11	mg/kg	0.20	110	85	115			
Benzene	12	mg/kg	0.20	120	85	115			S
Toluene	12	mg/kg	0.20	120	85	115			S
Ethylbenzene	12	mg/kg	0.20	120	85	115			S
Naphthalene	9.9	mg/kg	0.20	99.3	85	115			
Surr: Trifluorotoluene			0.20	61.6	85	115			S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: TANK PATHOLOGY		
Report Mail Address: 523 East Capitol Pierre SD	Contact Name, Phone, Fax, E-mail: Terry 773 3296	Sampler Name if other than Contact: Terry Florentz	
Invoice Address: Same	Invoice Contact & Phone #:	Purchase Order #:	ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐

Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments: call Terry 280-5208 w RUSH

Receipt Temp 23.0 °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A Water S Soils/Solids V Vegetation B Bioassay O Other)	BTEX	TPH as Gasoline	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Lab ID
1	BE MAIN-SE Island-3'	7/8/04	2:00	1 S	X	X				R4070103-001A
2	BE MAIN-SW Island-3'	7/8/04	2:10	1 S	X	X			X	002A
3	BE MAIN-Mid Piping-3'	7/8/04	2:20	1 S	X	X				003A
4	BE MAIN-NW Island-3'	7/8/04	2:30	1 S	X	X				004A
5	BE MAIN-NE Island-3'	7/8/04	2:40	1 S	X	X				005A
6	BE MAIN-North-11'	7/8/04	3:40	1 S	X	X				006A
7										
8										
9										
10										

ANALYSIS REQUESTED

RUSH ASAP Date

JUL 2004 RECEIVED DENR Ground Water Quality Program

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:
Relinquished by:	Date/Time:	Shipped by:	Received by: 7/8/04 1605 Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: Y

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Box Elder Big D
Lab ID: R04070184-001
Client Sample ID: BE Maingate-NE Base-16'

Report Date: 07/26/04
Collection Date: 07/13/04 08:15
Date Received: 07/13/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/24/04 18:24/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/24/04 18:24/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/24/04 18:24/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/24/04 18:24/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/24/04 18:24/SN
Naphthalene	0.05	mg/kg	J	0.20		1	SW8021B	07/24/04 18:24/SN
Surr: Trifluorotoluene	87.5	%REC			70-130		SW8021B	07/24/04 18:24/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	2	mg/kg	J	10		1	CA-LUFT	07/24/04 18:23/SN
Surr: Trifluorotoluene	83.9	%REC			60-150		CA-LUFT	07/24/04 18:23/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Box Elder Big D
Lab ID: R04070184-002
Client Sample ID: BE Maingate-SE Base-15'

Report Date: 07/26/04
Collection Date: 07/13/04 10:15
Date Received: 07/13/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/24/04 19:29/SN
Benzene	0.09	mg/kg	J	0.20		1	SW8021B	07/24/04 19:29/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/24/04 19:29/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/24/04 19:29/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/24/04 19:29/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	07/24/04 19:29/SN
Surr: Trifluorotoluene	87.9	%REC			70-130		SW8021B	07/24/04 19:29/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	2	mg/kg	J	10		1	CA-LUFT	07/24/04 19:28/SN
Surr: Trifluorotoluene	83.9	%REC			60-150		CA-LUFT	07/24/04 19:28/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Box Elder Big D
Lab ID: R04070184-003
Client Sample ID: BE Maingate-SE-11'

Report Date: 07/26/04
Collection Date: 07/13/04 10:25
Date Received: 07/13/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		2.0		10	SW8021B	07/24/04 22:45/SN
Benzene	ND	mg/kg		2.0		10	SW8021B	07/24/04 22:45/SN
Toluene	0.63	mg/kg	J	2.0		10	SW8021B	07/24/04 22:45/SN
Ethylbenzene	0.92	mg/kg	J	2.0		10	SW8021B	07/24/04 22:45/SN
Xylenes, Total	1.4	mg/kg	J	2.0		10	SW8021B	07/24/04 22:45/SN
Naphthalene	0.77	mg/kg	J	2.0		10	SW8021B	07/24/04 22:45/SN
Surr: Trifluorotoluene	93.6	%REC			70-130		SW8021B	07/24/04 22:45/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	300	mg/kg		100		10	CA-LUFT	07/24/04 22:44/SN
Surr: Trifluorotoluene	126	%REC			60-150		CA-LUFT	07/24/04 22:44/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Box Elder Big D
Lab ID: R04070184-004
Client Sample ID: BE Maingate-NW-12'

Report Date: 07/26/04
Collection Date: 07/13/04 10:40
Date Received: 07/13/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/24/04 20:34/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/24/04 20:34/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/24/04 20:34/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/24/04 20:34/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/24/04 20:34/SN
Naphthalene	0.04	mg/kg	J	0.20		1	SW8021B	07/24/04 20:34/SN
Surr: Trifluorotoluene	96.9	%REC			70-130		SW8021B	07/24/04 20:34/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	7	mg/kg	J	10		1	CA-LUFT	07/24/04 20:33/SN
Surr: Trifluorotoluene	92.0	%REC			60-150		CA-LUFT	07/24/04 20:33/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Box Elder Big D
Lab ID: R04070184-006
Client Sample ID: BE Maingate-East-9'

Report Date: 07/26/04
Collection Date: 07/13/04 10:55
Date Received: 07/13/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/24/04 17:51/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/24/04 17:51/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/24/04 17:51/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	07/24/04 17:51/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	07/24/04 17:51/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	07/24/04 17:51/SN
Surr: Trifluorotoluene	99.0	%REC			70-130		SW8021B	07/24/04 17:51/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	07/24/04 17:50/SN
Surr: Trifluorotoluene	94.6	%REC			60-150		CA-LUFT	07/24/04 17:50/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: Box Elder Big D
Lab ID: R04070184-005
Client Sample ID: BE Maingate-East-12'

Report Date: 07/26/04
Collection Date: 07/13/04 10:50
Date Received: 07/13/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	07/24/04 21:39/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	07/24/04 21:39/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	07/24/04 21:39/SN
Ethylbenzene	0.12	mg/kg	J	0.20		1	SW8021B	07/24/04 21:39/SN
Xylenes, Total	0.14	mg/kg	J	0.20		1	SW8021B	07/24/04 21:39/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	07/24/04 21:39/SN
Surr: Trifluorotoluene	91.1	%REC			70-130		SW8021B	07/24/04 21:39/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	39	mg/kg		10		1	CA-LUFT	07/24/04 21:38/SN
Surr: Trifluorotoluene	88.5	%REC			60-150		CA-LUFT	07/24/04 21:38/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: Box Elder Big D

Report Date: 07/26/04
Work Order: R04070184

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2387
Sample ID: MB-2387	Method Blank								07/24/04 12:15
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	102	60	150			
Sample ID: LCSG-2387	Laboratory Control Sample - generic								07/24/04 13:20
TPH as Gasoline	210	mg/kg	10	106	60	140			
Surr: Trifluorotoluene			0.40	120	50	200			
Sample ID: R04070211-001AMS	Sample Matrix Spike								07/24/04 16:45
TPH as Gasoline	230	mg/kg	10	112	60	140			
Surr: Trifluorotoluene			0.40	122	60	150			
Method: SW8021B									Batch: 2387
Sample ID: MB-2387	Method Blank								07/24/04 12:16
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	110	70	130			
Sample ID: LCSB-2387	Laboratory Control Sample - generic								07/24/04 12:49
Methyl tert-butyl ether (MTBE)	8.0	mg/kg	0.20	80.5	60	130			
Benzene	8.3	mg/kg	0.20	82.7	60	130			
Toluene	8.6	mg/kg	0.20	86	60	130			
Ethylbenzene	8.4	mg/kg	0.20	83.9	60	130			
Naphthalene	6.2	mg/kg	0.20	62.1	60	130			
Xylenes, Total	25	mg/kg	0.20	84.4	60	130			
Surr: Trifluorotoluene			0.20	101	60	130			
Sample ID: R04070211-001AMS	Sample Matrix Spike								07/24/04 16:13
Methyl tert-butyl ether (MTBE)	8.7	mg/kg	0.20	87.3	50	130			
Benzene	9.0	mg/kg	0.20	90.2	50	130			
Toluene	9.3	mg/kg	0.20	93	50	130			
Ethylbenzene	9.0	mg/kg	0.20	90.4	50	130			
Naphthalene	6.6	mg/kg	0.20	65.7	50	130			
Xylenes, Total	27	mg/kg	0.20	91	50	130			
Surr: Trifluorotoluene			0.20	105	50	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: Box Elder Bag D	
Report Mail Address: 523 East Capitol Pierre SD 57501	Contact Name, Phone, Fax, E-mail: Terry Floratz 773 3296	Sampler Name if other than Contact:
Invoice Address: same	Invoice Contact & Phone #:	Purchase Order #:

JUL 2004 RECEIVED DENR Ground Water Quality Program

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Receipt Temp 12.1 °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegetation Bioassay Other / MATRIX	BTEX	TPH as gasoline	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Lab ID
1	BE MAIN GATE - NE BASE - 16'	7/13/04	8:15a	1 S	X	X				B04070184-001A
2	BE MAIN GATE - SE BASE - 15	7/13/04	10:15	1 S	X	X				002A
3	BE MAIN GATE - SE - 11'	7/13/04	10:25	1 S	X	X				003A
4	BE MAIN GATE - NW - 12'	7/13/04	10:40	1 S	X	X				004A
5	BE MAIN GATE - East - 12'	7/13/04	10:50	1 S	X	X				005A
6	BE MAIN GATE - East - 9'	7/13/04	10:55	1 S	X	X				006A
7										
8										
9										
10										

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 7-13-04 11:30
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: ____

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	17	Contact :	Dave Kulish
Site Name:	Former Flying J	Address :	1002 W. Main Street
Address:	217 Ellsworth Road	City :	Rapid City
City :	Box Elder SD	Phone :	(605) 341-3858
County :	Pennington		

Legal Description of Property: Tract H of the SW 1/4 of the NW 1/4 and the NW 1/4 of the SW 1/4 of Section 27, Township 2 North, Range 8 East, Platted, County of Pennington South Dakota

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☐	Documentation of storage system installations, replacements, and upgrades.	☐	☐	☐
☐	Dates of upgrades or replacement of the storage tank systems.	☐	☐	☐
☒	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☒	☐	☐
☐	Manufacturer's performance claims for your leak detection system.	☐	☐	☐
☐	Repair, operation, and maintenance records.	☐	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☐	☒	☐
☐	Electronic release detection equipment monthly function checks.	☐	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☐	Monthly release detection results.	☐	☒	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☒	SD DENR Inspection Records	☐	☐	☒

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	1	4,000 gal	3	20,000 gal	3	10,000 gal
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☐	New at Install	☐	Used at Install	☒	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Dow Corning
Tank Installation Date:	1990
Tank Installer Name:	Dockendorf

Piping Manufacturer Name:	Ameron Fiberglass
Piping Installation Date:	1990
Piping Installer Name:	Dockendorf
Notes	

LINE TIGHTNESS TEST REPORT FORM

Testing Company: B & H Petroleum Co.	Phone Number: (507) 381-4507
Name of Person(s) Performing Test: Steve Schwatzenbach	Tester Certification Number and Expiration Date: MNB0102111204R 11-12-04
Manufacturer of Test Equipment / Model or Version: Petro-Tite Line Tester	
Equipment Threshold, GPH: .05	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing: 7-27-04	

Pressure Test																	Helium Test			
				Line Test Results																
				15 min		30 min		45 min		60 min		75 min		90 min						
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1	50	2"/100	0730	.056		.006		.003		0		0		0	.003	0900	P	0800	40	0830	P
2	50	3"/110	0830	.05		.004		.001		.001		0		0	.002	0945	P	0915	40	0945	P
3	50	2"/200	1515	.06		.008		0		0		0		0	0	1645	P	1555	40	1625	P
4	50	3"/210	1615			.051		.004		.001		0		0	.005	1730	P	1500	40	1535	P
5	50	2"/190	0815			.079		.004		.002		0		0	.006	0930	P	1405	40	1435	P
6	50	2"/80	1015			.025		.002		0		0		0	,002	1130	P	1640	40	1655	P

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Spill Containment Bucket
☒	Fiberglass	☐	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☐	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☐	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other	☐	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other (crushed rock)				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☐	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☒	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other (crushed rock)	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☒	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☒	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☐	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 07/27/2004month/day/year
Estimated number of gallons discharged:

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☒	Gasoline	☐	Aviation gas	☐	Other
☒	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☐	Water in Tank
☒	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

***If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☐ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☒	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☐	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☒	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:

Explanation:

Cause of the Discharge

☐	Loose Component	☒	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☐	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other

Explanation:

Contamination was found near one diesel dipenser island and the lines immediately adjacent to the dispenser. Because there were no dispenser pans it is equally likely that the contamination could have originated from a fueling overfill/spill as from a line or dispenser leak.

Release Identified by:

☐	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☒	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

This station was built in 1990 with two separate tank systems; one for semi-trucks and a second for automobiles, both serving traffic from the nearby interstate. Shortly after the station was opened contamination was found in a boring on the automobile side of the station. The actual source of the contamination was never determined.

After the interstate exit at this location was closed the owners requested to become part of the pathology study.

The pathology study began when precision testing of the lines was performed. No leaks were found during the line testing. Localized areas of contaminated soil were found beneath lines as they became exposed.

Two anomalies were found during system removal. One (of two) lift lugs was missing from a 20,000 gallon UST on the automobile side of the station. Also, each product line on this side of the station had been cut and a flex connector spliced into the underground run. Despite questioning the owner and installer of the piping, the reason for this alteration could not be determined.

SIGNATURE _____ DATE _____

AFFLILIATION: _____

Tank System Removal Form

Site Name: Flying J Truck Stop

Street Address: Ellsworth Road City: Box Elder

Tank No.	Capacity (gallons)	Contents at the Time of Removal	Condition
1	20,000	Unleaded Ethanol Gasoline	Good, broken lifting hook
2	10,000	Unleaded Regular Gasoline	Good to excellent
3	10,000	Unleaded Premium Gasoline	Good to excellent
4	4,000	Diesel	Good to excellent
5	20,000	Diesel	Good to excellent
6	20,000	Diesel	Good to excellent
7	10,000	Diesel	Good to excellent

Piping

Was the piping removed at this site? Yes x No ____

If the piping was not removed, please explain why.

Pump Islands

Number of pump islands at the site: 10 Number of islands removed: 10

If the pump islands were not removed, please explain why.

Was groundwater encountered in the excavation? Yes ____ No x If yes, at what depth? ____

Some perched water was encountered in the trench backfill west of the station building.

Was free product encountered in the excavation? Yes ____ No x If yes, describe the extent of the problem:

Loose cubic yards of soil hauled to the landfarm/landfill: 5 Loose cubic yards of fill used: 570

Imported backfill consisting of silty clay was used to replace the tank volume.

Briefly describe the lithology of the tank basin and any special circumstances relating to the site:

The tank basins had been backfilled with pea gravel, with alluvium sidewalls consisting of primarily of silty clay to 16 feet. No visible staining or other evidence of a petroleum release was present in either tank basin. Visible staining of soil and PID screening data indicated that petroleum releases had occurred within the piping trenches both east and west of the station building. Within the east piping trench, PID screening and laboratory-analysis data indicated releases at the diesel island (sample BE-Front#6-IslandNE-4') and near an apparent piping repair the south middle islands (sample BE-Front#4-Island MS-4'). Both samples exceeded the Tier 1 Trigger Level of 500 ppm.

West of the station, the diesel piping was in good condition, but the piping trench showed evidence of soil contamination. The petroleum-hydrocarbon concentrations documented in soil below the trench backfill (samples BE-Diesel Piping West-4' and BE-Diesel Piping East-4') were well above the Tier 1 Trigger Level of 500 ppm. Visual observations indicated that the diesel release west of the building probably resulted from leaking dispensers and surficial spills.

The piping and tanks that comprised the existing tank systems at this site were in good condition. As noted above, the east piping system appeared to have been repaired near sample location #4. Visibly-contaminated soils at this site appear to be the result of releases from dispensers, surface spills, and the piping where it was repaired.

As the Tier 1 trigger level of 500 ppm was exceeded, additional assessment will be required at this site.

Soil samples were collected by: Environmental Contractor: DENR-GWQ

Name: Terry Florentz Signature: ____ Date: ____

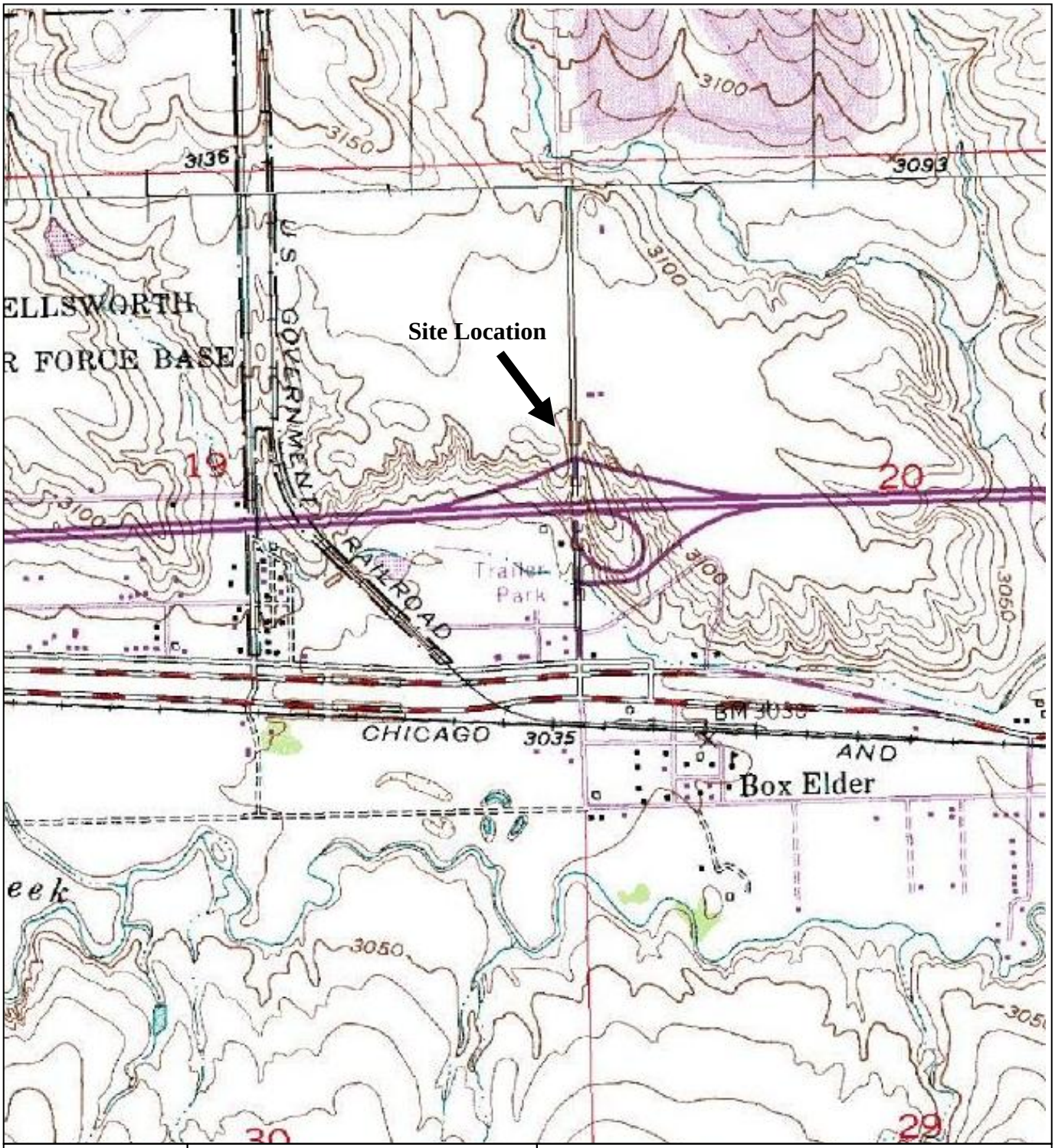
Table 1
PID Readings for Selected Soil Samples
Flying J
Box Elder, South Dakota

Sample ID	Location	Depth (ft)	PID
#1	Northwest Island, East System	3	0.0
#2	Northwest Island, East System	3	1.0
#3	Southwest Piping, East System	3	0.0
#4	Middle South Island, East System	3	127.
#5	Middle North Island, East System	3	0.0
#6	Northeast Island, East System	11	20.5
#7	Southeast Island, East System	16	4.0
#8	Southeast Piping, East System	15	0.5
#9	East Tank Basin, North Base	14	0.0
#10	East Tank Basin, Middle Base	14	0.0
#11	East Tank Basin, East Base	14	0.0
#12	East Tank Basin, West Base	14	0.0
#13	East Tank Basin, South Base	14	0.0
#14	West Tank Basin, Northwest Base	14	0.0
#15	West Tank Basin, Northeast Base	14	0.0
#16	West Tank Basin, Southwest Base	14	0.0
#17	West Tank Basin, Southeast Base	14	0.0
#18	Diesel Piping, West Island	14	40.0
#19	Diesel Piping, East Island	14	45.0
#20	Diesel Piping, South	14	4.0

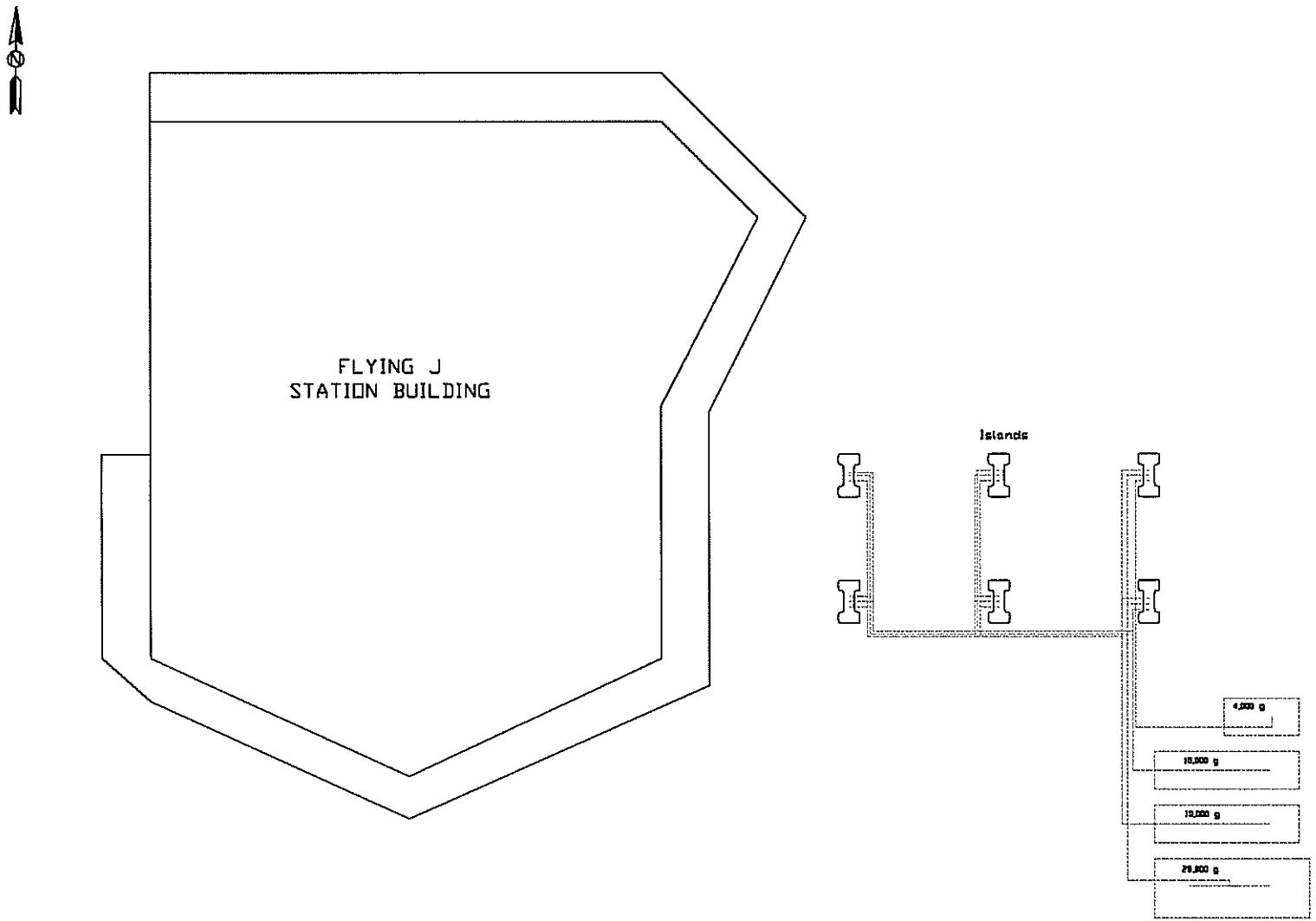
Table 2
Analytical Results for Soil Samples
Flying J
Box Elder, South Dakota

Sample ID	Benzene	Toluene	Ethyl-benzene	Xylene	TPH as Gasoline	MTBE	TPH as Fuel Oil	Naphthalene
#1) BE-Front#1-Island NW-4'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#2) BE-Front#2-Island SW-4'	< 0.2	< 0.2	< 0.2	< 0.2	6.	< 0.2		< 0.2
#3) BE-Front#3-PipingWest-4'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#4) BE-Front#4-Island MS-4'	< 0.2	0.07	0.74	6.	**820.**	< 0.2		2.
#5) BE-Front#5-Island MN-4'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#6) BE-Front#6-Island NE-4'							**7240.**	**27.**
#7) BE-Front#7-Island SE-4'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2	< 10.	< 0.2
#8) BE-Front#8-PipingEast-4'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#9) BE-Front-North-14'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#10) BE-Front-North-14'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#11) BE-Front-North-14'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#12) BE-Front-North-14'	< 0.2	< 0.2	< 0.2	< 0.2	< 10.	< 0.2		< 0.2
#13) BE-Front-South-14'	< 0.2	< 0.2	< 0.2	< 0.2	3.	< 0.2		0.06
#14) BE-Diesel NW-14'							< 10.0	< 0.66
#15) BE- Diesel NE-15'							< 10.0	< 0.66
#16) BE- Diesel SW-15'							< 10.0	< 0.66
#17) BE- Diesel SE-15'							< 10.0	< 0.66
#18) BE- Diesel Piping West-4'							**4150.**	11.
#19) BE- Diesel Piping East-4'							**21000.**	**47.**
Tier 1 Action Levels	**0.2**	**15.0**	**10.0**	**300.0**	**500.0**	**--**	**500.0**	**25.0**

Bold – Indicates levels that exceed Tier 1 Action Levels or "trigger level" of 500 ppm TPH.
TPH – Total Petroleum Hydrocarbons Results in mg/kg, which approximate parts per million (ppm)

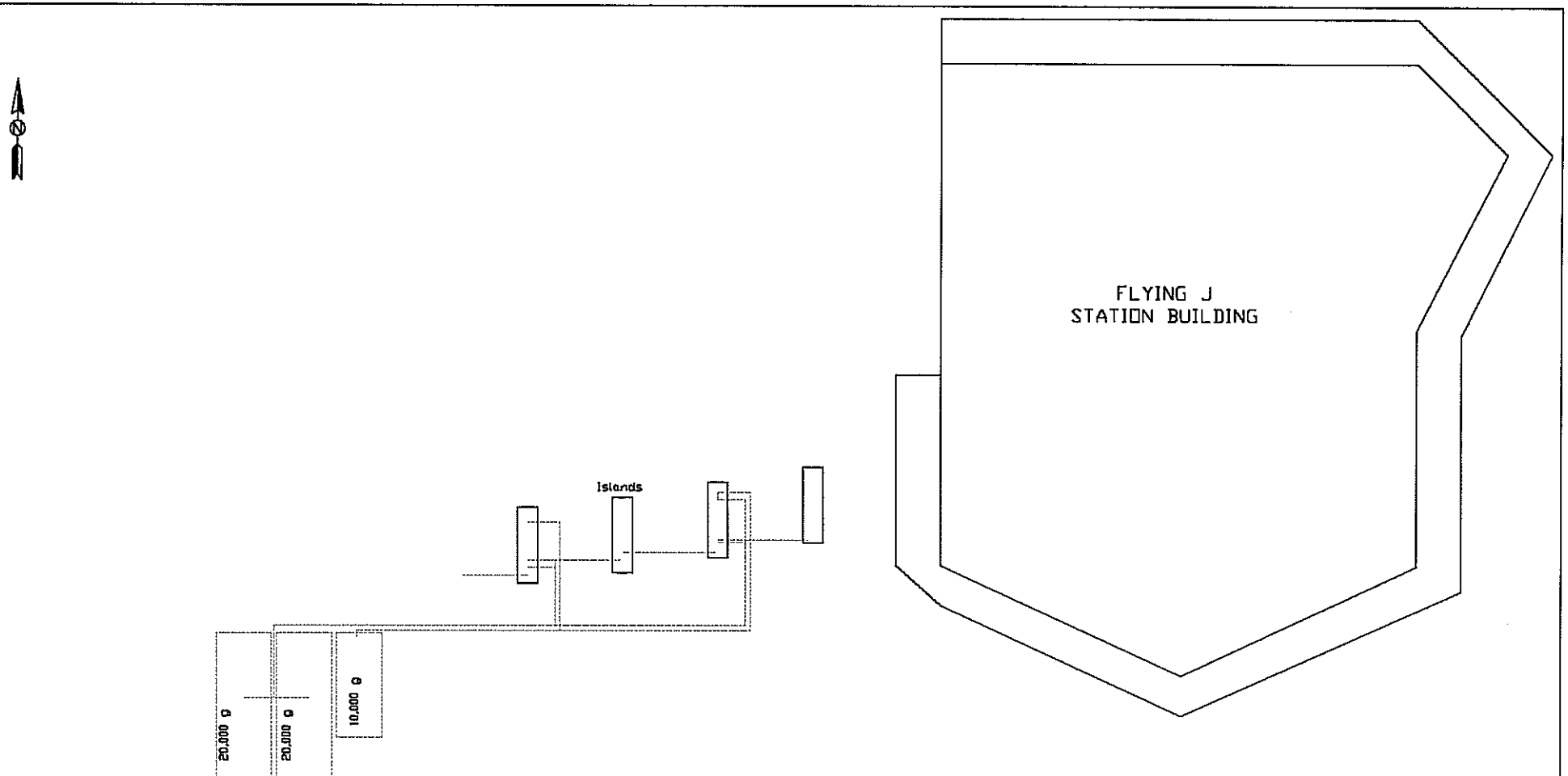


TPSS #17	Figure 1
Topographic Site Location Map Flying J Truck Stop 117 N. Ellsworth Road Box Elder, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**



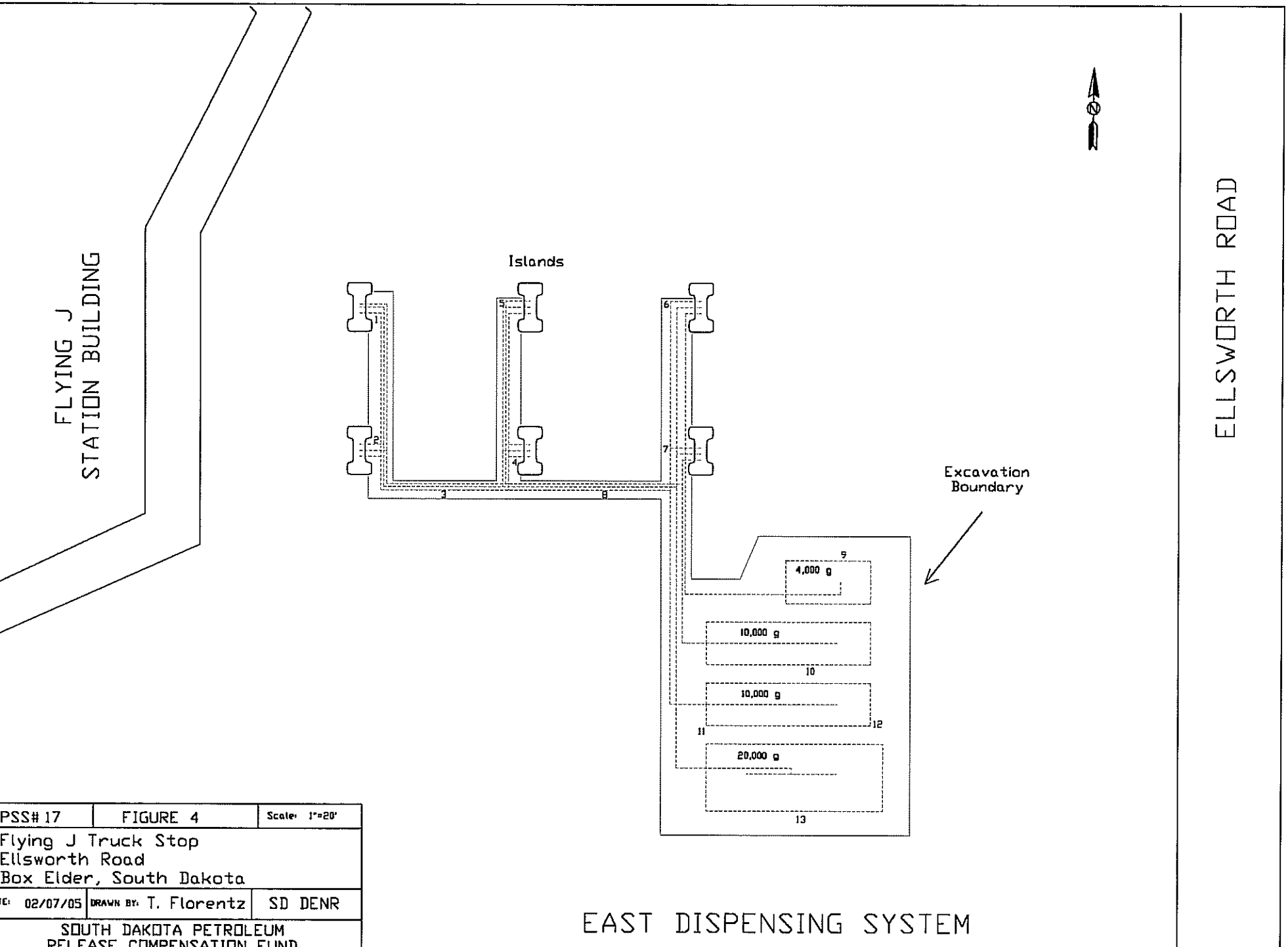
PSS# 17	FIGURE 2	Scale: 1"=30'
Flying J Truck Stop Ellsworth Road Box Elder, South Dakota		
TE: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

EAST DISPENSING SYSTEM



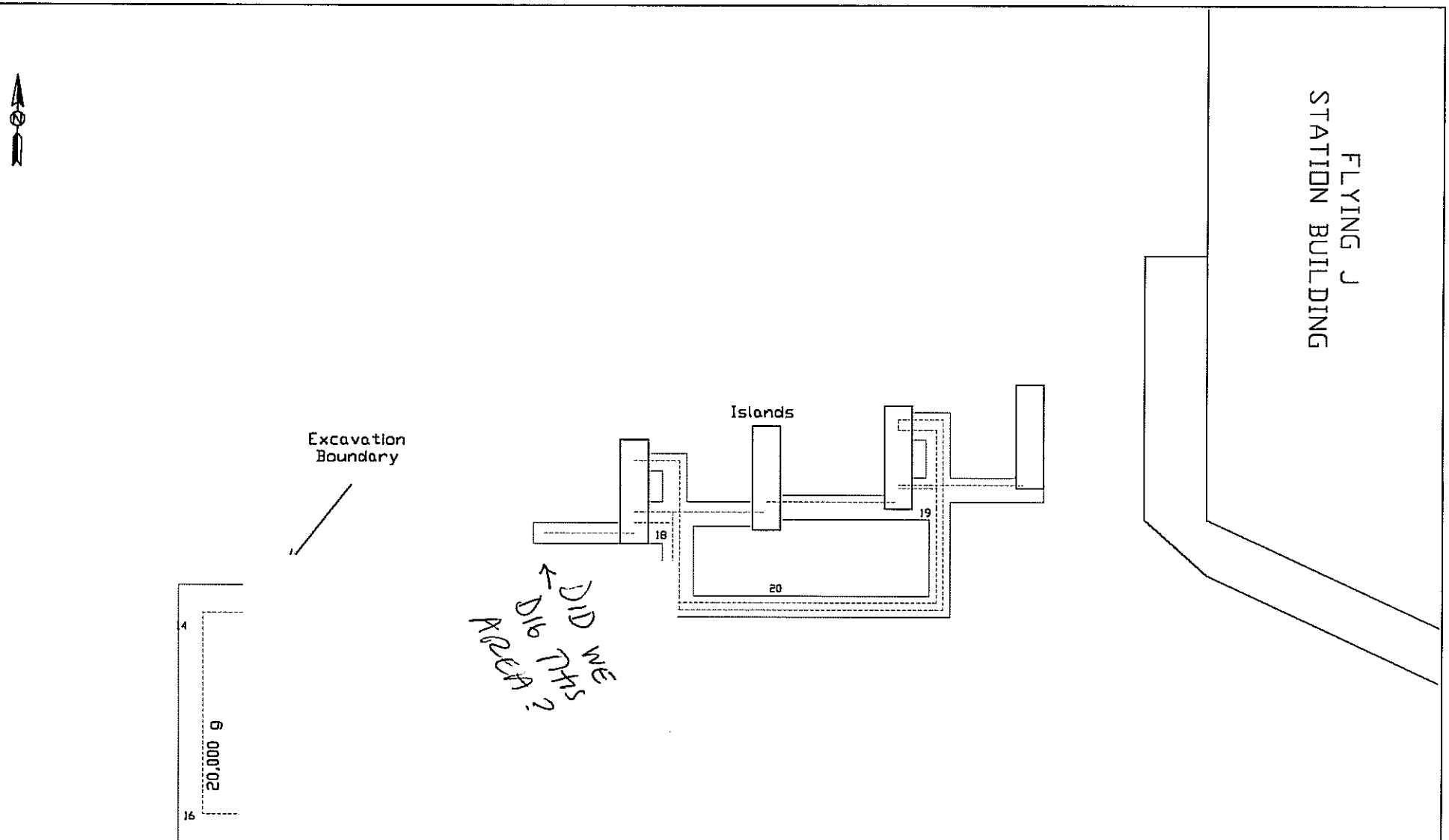
PSS# 17	FIGURE 3	Scale: 1"=30'
Flying J Truck Stop Ellsworth Road Box Elder, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

WEST DISPENSING SYSTEM



PSS# 17	FIGURE 4	Scale: 1"=20'
Flying J Truck Stop Ellsworth Road Box Elder, South Dakota		
E: 02/07/05	DRAWN BY: T. Florentz	SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND		

EAST DISPENSING SYSTEM



PSS# 17	FIGURE 5
Flying J Truck Stop Ellsworth Road Box Elder, South Dakota	
E: 02/07/05	DRAWN BY: T. Florentz — SD DENR
SOUTH DAKOTA PETROLEUM RELEASE COMPENSATION FUND	

WEST DISPENSING SYSTEM

ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab ID: R04070473-001
Client Sample ID: BE-Front-#1 Island NW-4'

Report Date: 08/18/04
Collection Date: 07/29/04 14:00
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:46/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:46/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:46/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:46/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:46/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:46/SN
Surr: Trifluorotoluene	111	%REC			70-130		SW8021B	08/09/04 19:46/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 19:44/SN
Surr: Trifluorotoluene	114	%REC			60-150		CA-LUFT	08/09/04 19:44/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab ID: R04070473-002
Client Sample ID: BE-Front-#2 Island SW-4'

Report Date: 08/18/04
Collection Date: 07/29/04 14:15
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:23/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:23/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:23/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:23/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:23/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:23/SN
Surr: Trifluorotoluene	80.6	%REC			70-130		SW8021B	08/09/04 21:23/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	6	mg/kg	J	10		1	CA-LUFT	08/09/04 21:22/SN
Surr: Trifluorotoluene	84.4	%REC			60-150		CA-LUFT	08/09/04 21:22/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab ID: R04070473-003
Client Sample ID: BE-Front-#3 Piping West-4'

Report Date: 08/18/04
Collection Date: 07/29/04 14:25
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:56/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:56/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:56/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:56/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:56/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 21:56/SN
Surr: Trifluorotoluene	137	%REC	S		70-130		SW8021B	08/09/04 21:56/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 21:54/SN
Surr: Trifluorotoluene	143	%REC			60-150		CA-LUFT	08/09/04 21:54/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab ID: R04070473-004
Client Sample ID: BE-Front-#4 Island MS-4'

Report Date: 08/18/04
Collection Date: 07/29/04 14:40
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/10/04 00:06/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/10/04 00:06/SN
Toluene	0.07	mg/kg	J	0.20		1	SW8021B	08/10/04 00:06/SN
Ethylbenzene	0.74	mg/kg		0.20		1	SW8021B	08/10/04 00:06/SN
Xylenes, Total	6.0	mg/kg		0.20		1	SW8021B	08/10/04 00:06/SN
Naphthalene	2.0	mg/kg		0.20		1	SW8021B	08/10/04 00:06/SN
Surr: Trifluorotoluene	126	%REC			70-130		SW8021B	08/10/04 00:06/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	820	mg/kg		100		10	CA-LUFT	08/10/04 16:51/SN
Surr: Trifluorotoluene	129	%REC			60-150		CA-LUFT	08/10/04 16:51/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab ID: R04070473-005
Client Sample ID: BE-Front-#5 Island MN-4'

Report Date: 08/18/04
Collection Date: 07/29/04 14:50
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 22:28/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 22:28/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 22:28/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 22:28/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 22:28/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 22:28/SN
Surr: Trifluorotoluene	109	%REC			70-130		SW8021B	08/09/04 22:28/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 22:27/SN
Surr: Trifluorotoluene	114	%REC			60-150		CA-LUFT	08/09/04 22:27/SN

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab ID: R04070473-006
Client Sample ID: BE-Front-#6 Island NE-4'

Report Date: 08/18/04
Collection Date: 07/29/04 15:05
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	7240	mg/kg		100		10	CA-LUFT	08/16/04 12:34/SN
Naphthalene	27	mg/kg		6.6		10	CA-LUFT	08/16/04 12:34/SN
Surr: o-Terphenyl	0	%REC	D		70-130		CA-LUFT	08/16/04 12:34/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab ID: R04070473-007
Client Sample ID: BE-Front-#7 Island SE-4'

Report Date: 08/18/04
Collection Date: 07/29/04 15:20
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:01/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:01/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:01/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:01/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:01/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:01/SN
Surr: Trifluorotoluene	98.1	%REC			70-130		SW8021B	08/09/04 23:01/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 22:59/SN
Surr: Trifluorotoluene	103	%REC			60-150		CA-LUFT	08/09/04 22:59/SN
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10	500	1	CA-LUFT	08/13/04 20:24/SN
Surr: o-Terphenyl	96.4	%REC			70-130		CA-LUFT	08/13/04 20:24/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab ID: R04070473-008
Client Sample ID: BE-Front-#8 Piping East-4'

Report Date: 08/18/04
Collection Date: 07/29/04 15:35
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:33/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:33/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:33/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:33/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:33/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 23:33/SN
Surr: Trifluorotoluene	91.9	%REC			70-130		SW8021B	08/09/04 23:33/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 23:32/SN
Surr: Trifluorotoluene	95.6	%REC			60-150		CA-LUFT	08/09/04 23:32/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: SD DENR
Project: BEFJ Tank Pathology

Report Date: 08/18/04
Work Order: R04070473

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2427
Sample ID: MB-2427	Method Blank								08/09/04 12:15
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	86.9	60	150			
Sample ID: LCSG-2427	Laboratory Control Sample - generic								08/09/04 13:20
TPH as Gasoline	220	mg/kg	10	112	60	140			
Surr: Trifluorotoluene			0.40	86.2	50	200			
Sample ID: R04070473-001AMS	Sample Matrix Spike								08/09/04 20:17
TPH as Gasoline	410	mg/kg	10	102	60	140			
Surr: Trifluorotoluene			0.40	142	60	150			
Sample ID: R04070473-001AMSD	Sample Matrix Spike Duplicate								08/09/04 20:49
TPH as Gasoline	360	mg/kg	10	90.2	60	140	12	20	
Surr: Trifluorotoluene			0.40	122	60	150			
Method: CA-LUFT									Batch: 2434
Sample ID: MB-2434	Method Blank								08/13/04 14:26
TPH as Fuel Oil	ND	mg/kg	10						
Naphthalene	ND	mg/kg	0.66						
Surr: o-Terphenyl			0.33	104	70	130			
Sample ID: LCS-2434	Laboratory Control Sample - generic								08/13/04 15:06
TPH as Fuel Oil	420	mg/kg	10	84	75	125			
Surr: o-Terphenyl			0.33	96.6	70	130			
Sample ID: LCSD-2434	Laboratory Control Sample Duplicate								08/13/04 15:46
TPH as Fuel Oil	482	mg/kg	10	96.4	75	125	14	20	
Surr: o-Terphenyl			0.33	96.6	70	130			
Sample ID: R04070472-002AMS	Sample Matrix Spike								08/13/04 17:46
TPH as Fuel Oil	473	mg/kg	10	94.6	75	125			
Surr: o-Terphenyl			0.33	96.1	70	130			
Sample ID: R04070472-002AMSD	Sample Matrix Spike Duplicate								08/13/04 18:25
TPH as Fuel Oil	462	mg/kg	10	92.4	75	125	2.4	20	
Surr: o-Terphenyl			0.33	96.4	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: BEFJ Tank Pathology

Report Date: 08/18/04
Work Order: R04070473

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: 2427
Sample ID: MB-2427	Method Blank								08/09/04 12:16
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	84.4	70	130			
Sample ID: LCSB-2427	Laboratory Control Sample - generic								08/09/04 12:49
Methyl tert-butyl ether (MTBE)	7.2	mg/kg	0.20	79.8	60	130			
Benzene	7.5	mg/kg	0.20	83.8	60	130			
Toluene	8.1	mg/kg	0.20	89.7	60	130			
Ethylbenzene	8.0	mg/kg	0.20	88.4	60	130			
Naphthalene	5.4	mg/kg	0.20	59.9	60	130			S
Xylenes, Total	24	mg/kg	0.20	88.8	60	130			
Surr: Trifluorotoluene			0.20	71.9	60	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: BEFJ Tank Pathology
Report Mail Address: 523 East Capitol Pierre SD 57501	Contact Name, Phone, Fax, E-mail: Terry Florentz 773 3296 — Sampler Name if other than Contact:
Invoice Address:	Invoice Contact & Phone #: — Purchase Order #: — Quote #:

RECEIVED AUG 2004 DENR Groundwater Quality Program

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Number of Containers
Sample Type: A Water S Soils/Solids V Vegetation B Bioassay O Other

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	TPH as diesel	BTEX	TPH as gasoline								SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments:	LABORATORY USE ONLY
1 BE-Front-#1 Island NW-4'	7/29/04	2:00	1 S		X	X												B4070473-001A
2 BE-Front-#2 Island SW-4'	7/29/04	2:15	1 S		X	X												002A
3 BE-Front-#3 Piping West-4'	7/29/04	2:25	1 S		X	X												003A
4 BE-Front-#4 Island MS-4'	7/29/04	2:40	1 S		X	X												004A
5 BE-Front-#5 Island MN-4'	7/29/04	2:50	1 S		X	X												005A
6 BE-Front-#6 Island NE-4'	7/29/04	3:05	1 S	X														006A
7 BE-Front-#7 Island SE-4'	7/29/04	3:20	1 S	X	X	X												007A
8 BE-Front-#8 Piping East-4'	7/29/04	3:35	1 S		X	X												008A
9																		
10																		

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Receipt Temp 17.3 °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

Custody Record MUST be Signed	Relinquished by:	Date/Time:	Shipped by:	Received by:	Date/Time:
	Relinquished by:	Date/Time:	Shipped by:	Received by:	Date/Time: 7-29-04 16:25

Sample Disposal: Return to client: ____ Lab Disposal: X

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, & links.

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LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Patholgy
Lab ID: R04070472-001
Client Sample ID: BE-Front-North-14'

Report Date: 08/18/04
Collection Date: 07/28/04 11:15
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 17:35/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 17:35/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 17:35/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 17:35/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 17:35/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 17:35/SN
Surr: Trifluorotoluene	120	%REC			70-130		SW8021B	08/09/04 17:35/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 17:34/SN
Surr: Trifluorotoluene	62.5	%REC			60-150		CA-LUFT	08/09/04 17:34/SN
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10	500	1	CA-LUFT	08/13/04 16:26/SN
Surr: o-Terphenyl	87.6	%REC			70-130		CA-LUFT	08/13/04 16:26/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Patholgy
Lab ID: R04070472-002
Client Sample ID: BE-Front-Middle Base-14'

Report Date: 08/18/04
Collection Date: 07/28/04 13:03
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:08/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:08/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:08/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:08/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:08/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:08/SN
Surr: Trifluorotoluene	93.1	%REC			70-130		SW8021B	08/09/04 18:08/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 18:06/SN
Surr: Trifluorotoluene	97.5	%REC			60-150		CA-LUFT	08/09/04 18:06/SN
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	ND	mg/kg		10	500	1	CA-LUFT	08/13/04 17:06/SN
Surr: o-Terphenyl	91.2	%REC			70-130		CA-LUFT	08/13/04 17:06/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Patholgy
Lab ID: R04070472-003
Client Sample ID: BE-Front-M East-14'

Report Date: 08/18/04
Collection Date: 07/28/04 13:40
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:40/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:40/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:40/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:40/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:40/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 18:40/SN
Surr: Trifluorotoluene	85.0	%REC			70-130		SW8021B	08/09/04 18:40/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 18:39/SN
Surr: Trifluorotoluene	88.1	%REC			60-150		CA-LUFT	08/09/04 18:39/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Patholgy
Lab ID: R04070472-004
Client Sample ID: BE-Front-M West-14'

Report Date: 08/18/04
Collection Date: 07/28/04 13:55
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
BTEX PARAMETERS								
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:13/SN
Benzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:13/SN
Toluene	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:13/SN
Ethylbenzene	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:13/SN
Xylenes, Total	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:13/SN
Naphthalene	ND	mg/kg		0.20		1	SW8021B	08/09/04 19:13/SN
Surr: Trifluorotoluene	82.0	%REC			70-130		SW8021B	08/09/04 19:13/SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE								
TPH as Gasoline	ND	mg/kg		10		1	CA-LUFT	08/09/04 19:11/SN
Surr: Trifluorotoluene	85.1	%REC			60-150		CA-LUFT	08/09/04 19:11/SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Patholgy
Lab ID: R04070472-005
Client Sample ID: BE-Diesel Piping-West-4'

Report Date: 08/18/04
Collection Date: 07/28/04 17:20
Date Received: 07/29/04
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL								
TPH as Fuel Oil	4150	mg/kg		100		10	CA-LUFT	08/16/04 11:54/SN
Naphthalene	11	mg/kg		6.6		10	CA-LUFT	08/16/04 11:54/SN
Surr: o-Terphenyl	0	%REC	D		70-130		CA-LUFT	08/16/04 11:54/SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: SD DENR
Project: BEFJ Tank Patholgy

Report Date: 08/18/04
Work Order: R04070472

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2427
Sample ID: MB-2427	Method Blank								08/09/04 12:15
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	86.9	60	150			
Sample ID: LCSG-2427	Laboratory Control Sample - generic								08/09/04 13:20
TPH as Gasoline	220	mg/kg	10	112	60	140			
Surr: Trifluorotoluene			0.40	86.2	50	200			
Sample ID: R04070473-001AMS	Sample Matrix Spike								08/09/04 20:17
TPH as Gasoline	410	mg/kg	10	102	60	140			
Surr: Trifluorotoluene			0.40	142	60	150			
Sample ID: R04070473-001AMSD	Sample Matrix Spike Duplicate								08/09/04 20:49
TPH as Gasoline	360	mg/kg	10	90.2	60	140	12	20	
Surr: Trifluorotoluene			0.40	122	60	150			
Method: CA-LUFT									Batch: 2434
Sample ID: MB-2434	Method Blank								08/13/04 14:26
TPH as Fuel Oil	ND	mg/kg	10						
Naphthalene	ND	mg/kg	0.66						
Surr: o-Terphenyl			0.33	104	70	130			
Sample ID: LCS-2434	Laboratory Control Sample - generic								08/13/04 15:06
TPH as Fuel Oil	420	mg/kg	10	84	75	125			
Surr: o-Terphenyl			0.33	96.6	70	130			
Sample ID: LCSD-2434	Laboratory Control Sample Duplicate								08/13/04 15:46
TPH as Fuel Oil	482	mg/kg	10	96.4	75	125	14	20	
Surr: o-Terphenyl			0.33	96.6	70	130			
Sample ID: R04070472-002AMS	Sample Matrix Spike								08/13/04 17:46
TPH as Fuel Oil	473	mg/kg	10	94.6	75	125			
Surr: o-Terphenyl			0.33	96.1	70	130			
Sample ID: R04070472-002AMSD	Sample Matrix Spike Duplicate								08/13/04 18:25
TPH as Fuel Oil	462	mg/kg	10	92.4	75	125	2.4	20	
Surr: o-Terphenyl			0.33	96.4	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: SD DENR
Project: BEFJ Tank Patholgy

Report Date: 08/18/04
Work Order: R04070472

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: 2427
Sample ID: MB-2427	Method Blank								08/09/04 12:16
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	84.4	70	130			
Sample ID: LCSB-2427	Laboratory Control Sample - generic								08/09/04 12:49
Methyl tert-butyl ether (MTBE)	7.2	mg/kg	0.20	79.8	60	130			
Benzene	7.5	mg/kg	0.20	83.8	60	130			
Toluene	8.1	mg/kg	0.20	89.7	60	130			
Ethylbenzene	8.0	mg/kg	0.20	88.4	60	130			
Naphthalene	5.4	mg/kg	0.20	59.9	60	130			S
Xylenes, Total	24	mg/kg	0.20	88.8	60	130			
Surr: Trifluorotoluene			0.20	71.9	60	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: BEFJ TANK PATHOLOGY
Report Mail Address: 523 East Capitol Pierre SD 57501	Contact Name, Phone, Fax, E-mail: Terry Floreitz 773 3296
Invoice Address:	Invoice Contact & Phone #:
	Purchase Order #: ELI Quote #:

RECEIVED 2004 DENR

Report Required For: POTW/WWTP ☐ DW ☐ Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Receipt Temp 17.3 °C

Cooler ID(s) ____

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegetation Bioassay Other / MATRIX	ANALYSIS REQUESTED: TPHas diesel	BTEX	TPH as gasoline	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments	LABORATORY USE ONLY
1 BE-Front-North-14'	7/28/04	11:15	1 S	X	X	X					R04070472-001A
2 BE-Front-MiddleBase-14'	7/28/04	1:03	1 S	X	X	X					002A
3 BE-Front-MEast-14'	7/28/04	1:40	1 S		X	X					003A
4 BE-Front-MWest-14'	7/28/04	1:55	1 S		X	X					004A
5 BE-Diesel Piping-West-4'	7/28/04	5:20	1 S	X						West of Building	005A
6											
7											
8											
9											
10											

Custody Record MUST be Signed

Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 7-29-04 16:25
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: ____

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

ENERGY LABORATORIES, INC. • 2821 Plant Street • Rapid City, SD 57702
888.672.1225 • 605.342.1225 • 605.342.1397 fax • rapid_city@energylab.com

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology
Lab Order: R04070428
Report Date: 08/10/04

Lab ID: R04070428-001
Client Sample ID: BE-Diesel NW-14'
Matrix: SOIL
Collection Date: 07/26/04 17:30
DateReceived: 07/28/04

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL							
TPH as Fuel Oil	ND	mg/kg		10		CA-LUFT	08/02/04 17:10 / SN
Naphthalene	ND	mg/kg		0.66		CA-LUFT	08/02/04 17:10 / SN
Surr: o-Terphenyl	94.9	%REC			70-130	CA-LUFT	08/02/04 17:10 / SN

Lab ID: R04070428-002
Client Sample ID: BE-NE-15'
Matrix: SOIL
Collection Date: 07/27/04 10:15
DateReceived: 07/28/04

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL							
TPH as Fuel Oil	ND	mg/kg		10		CA-LUFT	08/02/04 17:50 / SN
Naphthalene	ND	mg/kg		0.66		CA-LUFT	08/02/04 17:50 / SN
Surr: o-Terphenyl	94.6	%REC			70-130	CA-LUFT	08/02/04 17:50 / SN

Lab ID: R04070428-003
Client Sample ID: BE-SW-15'
Matrix: SOIL
Collection Date: 07/27/04 10:30
DateReceived: 07/28/04

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL							
TPH as Fuel Oil	ND	mg/kg		10		CA-LUFT	08/02/04 18:30 / SN
Naphthalene	ND	mg/kg		0.66		CA-LUFT	08/02/04 18:30 / SN
Surr: o-Terphenyl	93.0	%REC			70-130	CA-LUFT	08/02/04 18:30 / SN

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology

Lab Order: R04070428
Report Date: 08/10/04

Lab ID: R04070428-004
Client Sample ID: BE-SE-15'
Matrix: SOIL

Collection Date: 07/27/04 11:05
DateReceived: 07/28/04

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL							
TPH as Fuel Oil	ND	mg/kg		10		CA-LUFT	08/02/04 19:11 / SN
Naphthalene	ND	mg/kg		0.66		CA-LUFT	08/02/04 19:11 / SN
Surr: o-Terphenyl	97.3	%REC			70-130	CA-LUFT	08/02/04 19:11 / SN

Lab ID: R04070428-005
Client Sample ID: BE-Front-South-14'
Matrix: SOIL

Collection Date: 07/27/04 17:00
DateReceived: 07/28/04

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
BTEX PARAMETERS							
Methyl tert-butyl ether (MTBE)	ND	mg/kg		0.20		SW8021B	08/09/04 17:03 / SN
Benzene	ND	mg/kg		0.20		SW8021B	08/09/04 17:03 / SN
Toluene	ND	mg/kg		0.20		SW8021B	08/09/04 17:03 / SN
Ethylbenzene	ND	mg/kg		0.20		SW8021B	08/09/04 17:03 / SN
Xylenes, Total	ND	mg/kg		0.20		SW8021B	08/09/04 17:03 / SN
Naphthalene	0.06	mg/kg	J	0.20		SW8021B	08/09/04 17:03 / SN
Surr: Trifluorotoluene	105	%REC			70-130	SW8021B	08/09/04 17:03 / SN
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE							
TPH as Gasoline	3	mg/kg	J	10		CA-LUFT	08/09/04 17:01 / SN
Surr: Trifluorotoluene	108	%REC			60-150	CA-LUFT	08/09/04 17:01 / SN

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

ENERGY LABORATORIES

LABORATORY ANALYTICAL REPORT

Client: SD DENR
Project: BEFJ Tank Pathology

Lab Order: R04070428
Report Date: 08/10/04

Lab ID: R04070428-006
Client Sample ID: BE-Diesel Piping-East-4'
Matrix: SOIL

Collection Date: 07/27/04 16:40
DateReceived: 07/28/04

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
TOTAL METALS ANALYSES							
Lead	8	mg/kg		1		SW6010B	08/04/04 22:26 / LJH
TOTAL PETROLEUM HYDROCARBONS AS FUEL OIL							
TPH as Fuel Oil	21000	mg/kg		200		CA-LUFT	08/04/04 16:00 / SN
Naphthalene	47	mg/kg		13		CA-LUFT	08/04/04 16:00 / SN
Surr: o-Terphenyl	0	%REC	D		70-130	CA-LUFT	08/04/04 16:00 / SN

- D=Sample's dilution caused surrogate recovery to be outside QC advisory limits.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: BEFJ Tank Pathology

Report Date: 08/10/04
Work Order: R04070428

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: CA-LUFT									Batch: 2400
Sample ID: MB-2400	Method Blank								08/02/04 13:06
TPH as Fuel Oil	ND	mg/kg	10						
Naphthalene	ND	mg/kg	0.66						
Surr: o-Terphenyl			0.33	89.4	70	130			
Sample ID: LCS-2400	Laboratory Control Sample - generic								08/02/04 13:46
TPH as Fuel Oil	436	mg/kg	10	87.2	75	125			
Surr: o-Terphenyl			0.33	93.7	70	130			
Sample ID: LCSD-2400	Laboratory Control Sample Duplicate								08/02/04 14:27
TPH as Fuel Oil	423	mg/kg	10	84.6	75	125	3.0	20	
Surr: o-Terphenyl			0.33	91.8	70	130			
Sample ID: R04070346-001AMS	Sample Matrix Spike								08/02/04 15:48
TPH as Fuel Oil	502	mg/kg	10	98.7	75	125			
Surr: o-Terphenyl			0.33	105	70	130			
Sample ID: R04070346-001AMSD	Sample Matrix Spike Duplicate								08/02/04 16:29
TPH as Fuel Oil	421	mg/kg	10	82.5	75	125	18	20	
Surr: o-Terphenyl			0.33	90.1	70	130			
Method: CA-LUFT									Batch: 2427
Sample ID: MB-2427	Method Blank								08/09/04 12:15
TPH as Gasoline	ND	mg/kg	10						
Surr: Trifluorotoluene			0.40	86.9	60	150			
Sample ID: LCSG-2427	Laboratory Control Sample - generic								08/09/04 13:20
TPH as Gasoline	220	mg/kg	10	112	60	140			
Surr: Trifluorotoluene			0.40	86.2	50	200			
Sample ID: R04070473-001AMS	Sample Matrix Spike								08/09/04 20:17
TPH as Gasoline	410	mg/kg	10	102	60	140			
Surr: Trifluorotoluene			0.40	142	60	150			
Sample ID: R04070473-001AMSD	Sample Matrix Spike Duplicate								08/09/04 20:49
TPH as Gasoline	360	mg/kg	10	90.2	60	140	12	20	
Surr: Trifluorotoluene			0.40	122	60	150			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

ENERGY LABORATORIES

QA/QC Summary Report

Client: SD DENR
Project: BEFJ Tank Pathology

Report Date: 08/10/04
Work Order: R04070428

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B									Batch: 2408
Sample ID: LCS040210-01	Laboratory Fortified Blank								08/04/04 21:57
Lead	60	mg/kg	1.0	95.7	85	115			
Sample ID: MB040210-01	Method Blank								08/04/04 22:02
Lead	ND	mg/kg	0.06						
Method: SW8021B									Batch: 2427
Sample ID: MB-2427	Method Blank								08/09/04 12:16
Methyl tert-butyl ether (MTBE)	ND	mg/kg	0.20						
Benzene	ND	mg/kg	0.20						
Toluene	ND	mg/kg	0.20						
Ethylbenzene	ND	mg/kg	0.20						
Naphthalene	ND	mg/kg	0.20						
Xylenes, Total	ND	mg/kg	0.20						
Surr: Trifluorotoluene			0.20	84.4	70	130			
Sample ID: LCSB-2427	Laboratory Control Sample - generic								08/09/04 12:49
Methyl tert-butyl ether (MTBE)	7.2	mg/kg	0.20	79.8	60	130			
Benzene	7.5	mg/kg	0.20	83.8	60	130			
Toluene	8.1	mg/kg	0.20	89.7	60	130			
Ethylbenzene	8.0	mg/kg	0.20	88.4	60	130			
Naphthalene	5.4	mg/kg	0.20	59.9	60	130			S
Xylenes, Total	24	mg/kg	0.20	88.8	60	130			
Surr: Trifluorotoluene			0.20	71.9	60	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: DENR	Project Name, PWS #, Permit #, Etc.: BEFJ TANK PATHOLOGY
Report Mail Address: 523 East Capitol Pierre SD	Contact Name, Phone, Fax, E-mail: Terry Florentz
Invoice Address:	Invoice Contact & Phone #:
	Purchase Order #:
	EEI Quote #

RECEIVED AUG 2004 DENR

Report Required For: POTW/WWTP ☐ DW ☐

Other ____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other ____

EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Receipt Temp 8.4 °C

Cooler ID(s)

Custody Seal Y N

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V B O / Air Water Solls/Solids Vegetation Bioassay Other / MATRIX	TPH as diesel	Total Lead	BTEX	TPH as gasoline	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments	Lab ID
1	BE-Diesel NW - 14'	7/26/04	5:30p	1 S	X					-			RDH0704 28-001A
2	BE-NE-15'	7/~~26~~27/04	10:15a	1 S	X					-			002A
3	BE-SW-15'	7/27/04	10:30a	1 S	X					-			003A
4	BE-SE-15'	7/27/04	11:05a	1 S	X					-			004A
5	BE-Front-South-14'	7/27/04	5:00p	1 S			X	X		-			005A
6	BE-Diesel Piping-East-4'	7/27/04	4:40p	1 S	X	X					X	RUSH	006A
7													
8													
9													
10													

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 7-28-04 7:00
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: K

LABORATORY USE ONLY

Sample Type: ____ # of fractions ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

South Dakota Petroleum Release Compensation Fund

Tank Pathology Study

Site Information

Project Location #	**18**	Contact :	Glenn Norgard
Site Name:	Casey's - Lennox	Address :	1 Convenience Boulevard
Address:	416 N. Pine Street	City :	Ankeny
City :	Lennox	Phone :	(515) 965-6231
County :	Lincoln		

Legal Description of Property: North 183 feet of the East 200 feet and Lot 4, Outlot 60, except Lot H-1, Outlots to Lennox, Lincoln County South Dakota.

Records and Certificates

		Accurate and Complete	Incomplete	Erroneous
☒	Documentation of storage system installations, replacements, and upgrades.	☐	☒	☐
☒	Dates of upgrades or replacement of the storage tank systems.	☒	☐	☐
☒	Documentation of installation, maintenance, inspections, and results of cathodic protection system tests.	☒	☐	☐
☒	Manufacturer's performance claims for your leak detection system.	☒	☐	☐
☒	Repair, operation, and maintenance records.	☒	☐	☐
☒	Storage tank fuel inventory, including tank water level.	☒	☐	☐
☒	Electronic release detection equipment monthly function checks.	☒	☐	☐
☐	Monthly maintenance visual examinations and results.	☐	☐	☐
☒	Monthly release detection results.	☒	☐	☐
☐	Results of internal inspections.	☐	☐	☐
☐	Results of tightness, pressure, and integrity tests.	☐	☐	☐
☒	SD DENR Inspection Records	☒	☐	☐

System Information

Tank Type

		#	Size	#	Size	#	Size
☒	Underground Storage Tank	1	6,000 gal	1	10,000 gal		
☐	Shop-fabricated Aboveground Storage Tank						
☐	Field-erected Aboveground Storage Tank						

☒	Underground Storage Tank	☐	New at Install	☐	Used at Install	☒	Unknown
☐	Shop-fabricated Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown
☐	Field-erected Aboveground Storage Tank	☐	New at Install	☐	Used at Install	☐	Unknown

Tank Manufacturer Name:	Modern
Tank Installation Date:	1984
Tank Installer Name:	unknown

Piping Manufacturer Name:	Ameron Fiberglass
Piping Installation Date:	1993
Piping Installer Name:	Siouxland Environmental/Petro

Notes

LINE TIGHTNESS TEST REPORT FORM

Testing Company :	Phone Number:
Name of Person(s) Performing Test:	Tester Certification Number and Expiration Date:
Manufacturer of Test Equipment / Model or Version:	
Equipment Threshold, GPH:	
Correction / Correlation Factor for Increment Lost to Leak Rate / Hour:	
Date of Testing:	

Pressure Test																		Helium Test			
				Line Test Results																	
				15 min		30 min		45 min		60 min		75 min		90 min							
Line No.	Test Pressure	Line Diameter / Length	Time Test Started	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Increments Lost	Leak Rate per Hour	Time Test Ended	Pass / Fail / Inconclusive	Time Stated	Test Pressure	Time Test Ended	Pass / Fail
1																					
2																					
3																					
4																					
5																					
6																					

Tank Information

Underground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☒	Spill Containment Bucket
☐	Fiberglass	☒	Impressed Current System	☐	No Spill Containment
☐	Composite	☐	Internal Lining	☐	Unknown
☐	Unprotected Steel	☒	Single Wall		
☒	Steel w/ external coating	☐	Double Wall (same material)	☒	Overfill Protection
☐	Concrete	☐	Double Wall (different material)	☒	Ball Check Valve
☐	Polyethylene	☐	Secondary Containment with a liner	☒	Flow Shut-Off
☐	Unknown	☐	Compartmented	☐	Tight Fill
☐	Other Approved	☐	Other	☒	Alarm System
				☐	No Overfill Protection
	Bedding Material			☐	Unknown
☐	Native Soils				
☐	Pea Rock				
☒	Other (quartzite dust)				

Aboveground Storage Tank

	Material		Other Attributes		Ancillary Equipment
☐	Steel	☐	Shop-Fabricated	☐	Spill Cont. (for Shop-Fabricated Tanks)
☐	Concrete	☐	Field-Erected	☐	No Spill Containment
☐	Polyethylene	☐	Synthetic liner beneath tank (SC)	☐	Unknown
☐	Approved Synthetic	☐	Concrete beneath tank (SC)		
☐	Cut and Cover	☐	Double Wall	☐	Overfill Protection
☐	Other Approved	☐	Internal Secondary Containment	☐	Flow Shut-Off
☐	Unknown	☐	Other Approved Secondary Containment	☐	Alarm System
		☐	Single Wall	☐	Gauges
		☐	Impressed Current System	☐	No Overfill Protection
		☐	Synthetic Dike Field Liner	☐	Other
		☐	Concrete Dike Field Liner		
		☐	Other Approved Dike Field Liner	☐	Other Approved
		☐	Secondary Containment around pumps/valves		
		☐	No Dike Field Secondary Containment		

Piping Information

	Material		Other Attributes		Ancillary Equipment
☐	Galvanized Steel	☐	Sacrificial Anodes	☐	Dispenser Sump(s)
☒	Fiberglass	☐	Impressed Current System	☒	No Dispenser Sumps
☐	Composite	☒	Single Wall	☐	Unknown
☐	Unprotected Steel	☐	Double Wall (same material)		
☐	Steel w/ external coating	☐	Double Wall (different material)	☐	Piping Sump(s)
☐	Flexible Synthetic	☐	Secondary Containment w/ Rock Guard	☒	No Piping Sumps
☐	Other	☐	Other Secondary Containment	☐	Unknown
☐	Unknown	☐	Box-trench Liner		
		☐	Pressurized	☐	Single check valve
	Bedding Material	☐	Suction	☐	Foot Valves
☐	Native Soils	☐	Manifolded	☐	Unknown
☐	Pea Rock	☐	Bulk Product		
☒	Other (quartzite dust)	☒	Small Diameter (≤ 4")		
		☐	Hydrant System		
		☐	Not in contact with soil		
		☐	Over Surface Water		

Leak Detection Information

	UST		AST		Piping
☐	Internal Interstitial Monitoring	☐	Interstitial Monitoring	☐	Interstitial Monitoring
☐	Interstitial Monitoring within a liner system	☐	Groundwater Monitoring Wells	☐	Groundwater Monitoring Wells
☐	Groundwater Monitoring Wells	☐	Vapor Monitoring Wells	☐	Vapor Monitoring Wells
☐	Vapor Monitoring Wells	☐	Vapor Monitoring Probes	☐	Vapor Monitoring Probes
☐	Tracer Technology	☐	Tracer Technology	☐	Tracer Technology
☐	Statistical Inventory Reconciliation (SIR)	☐	Cable Systems	☐	Cable Systems
☒	Automatic Tank Gauging	☐	Fiber-optic Technologies	☐	Pressure Tests
☐	Manual Tank Gauging	☐	SPCC Plans	☐	Mechanical Line Leak Det.
☐	Tank Tightness Testing	☐	Tank Shell Monitoring System	☒	Electrical Line Leak Det.
☐	Visual Inspections	☐	Visual Inspections	☐	Visual Inspections
☐	Other	☐	Other	☐	Other

Release Information

Date of receipt of test results or discovery of confirmed discharge: 04/07/1997month/day/year
Estimated number of gallons discharged:

Media affected

☐	Indoor Air	☐	Drinking water well(s)
☒	Soil	☐	Surface water
☐	Ground water	☐	Other

Type of regulated substance discharged: (check one)

☒	Gasoline	☐	Aviation gas	☐	Other
☐	Diesel	☐	Used/waste oil	☐	Unknown
☐	Kerosene	☐	Gasohol		
☐	Jet fuel	☐	Heating oil		

Method of Discovery of the Discharge

☐	Leak Detection Methods	*(Please specify below which method of leak detection ***)*	
☐	Closure-in-Place	☒	Water in Tank
☐	Removal	☐	Internal Tank Inspection
☐	Installation or Upgrade	☐	Analytical tests or samples
☐	Property Transfer	☐	Unknown
☐	Visual	☐	Other
☐	Olfactory		

*****If Leak Detection, specify method:**

☐	Inventory Reconciliation	☐	Automatic Tank Gauging
☐	Manual Tank Gauging	☐	SIR
☐	Groundwater Monitoring	☐	Mechanical Line Leak Det
☐	Vapor Monitoring	☐	Electronic Line Leak Det
☐	Secondary/Interstitial Monitoring	☐	Other Approved Methods
☐	Annual or Regularly Scheduled Tank Tightness Testing	☐	Vapor Monitoring Probes
☐	Other:		

Did the method of Leak Detection relied upon for compliance purposes fail to detect the release?
☐ Yes ☐ No ☒ Unknown
If so, what was the method relied upon for compliance purposes?

Source of Discharge

☐	UST	☐	Shop-Fabricated AST
☐	Small Diameter Piping (≤ 4")	☐	Field-erected AST
☐	Flex-Connector	☐	Bulk Product Piping
☐	UST Vent Line	☐	Pipeline
☒	UST Fill Pipe	☐	Valves (ASTs)
☐	UST Turbine Pump	☐	Pump (ASTs)
☐	Dispenser	☐	Loading Dock
☐	Delivery Vehicle	☐	Fill Pipe
☐	Previous Tank System	☐	AST Vents
☐	Other:	☐	Other:

Explanation:

Cause of the Discharge

☒	Loose Component	☒	Spill	☐	Improper Installation
☐	Corrosion	☐	Overfill	☐	Vehicle Accident
☐	Puncture	☐	Weather	☐	Material Incompatibility
☐	Material Failure	☐	Human Error	☒	Physical or Mechanical Damage
☐	Vandalism	☐	Fire/Explosion	☐	Unknown
				☐	Other

Explanation:

It appeared that the dialectric bushing was lifted from the bung when water above the bushing froze, eventually expanding and stripping the threads.

Release Identified by:

☒	Owner/Operator	☐	Service Contractor	☐	Local Government Inspector
☐	Third Party	☐	Consultant	☐	State Inspector
☐	Other :				

Additional Information

If additional sheets are necessary, please attach them to the back of this form

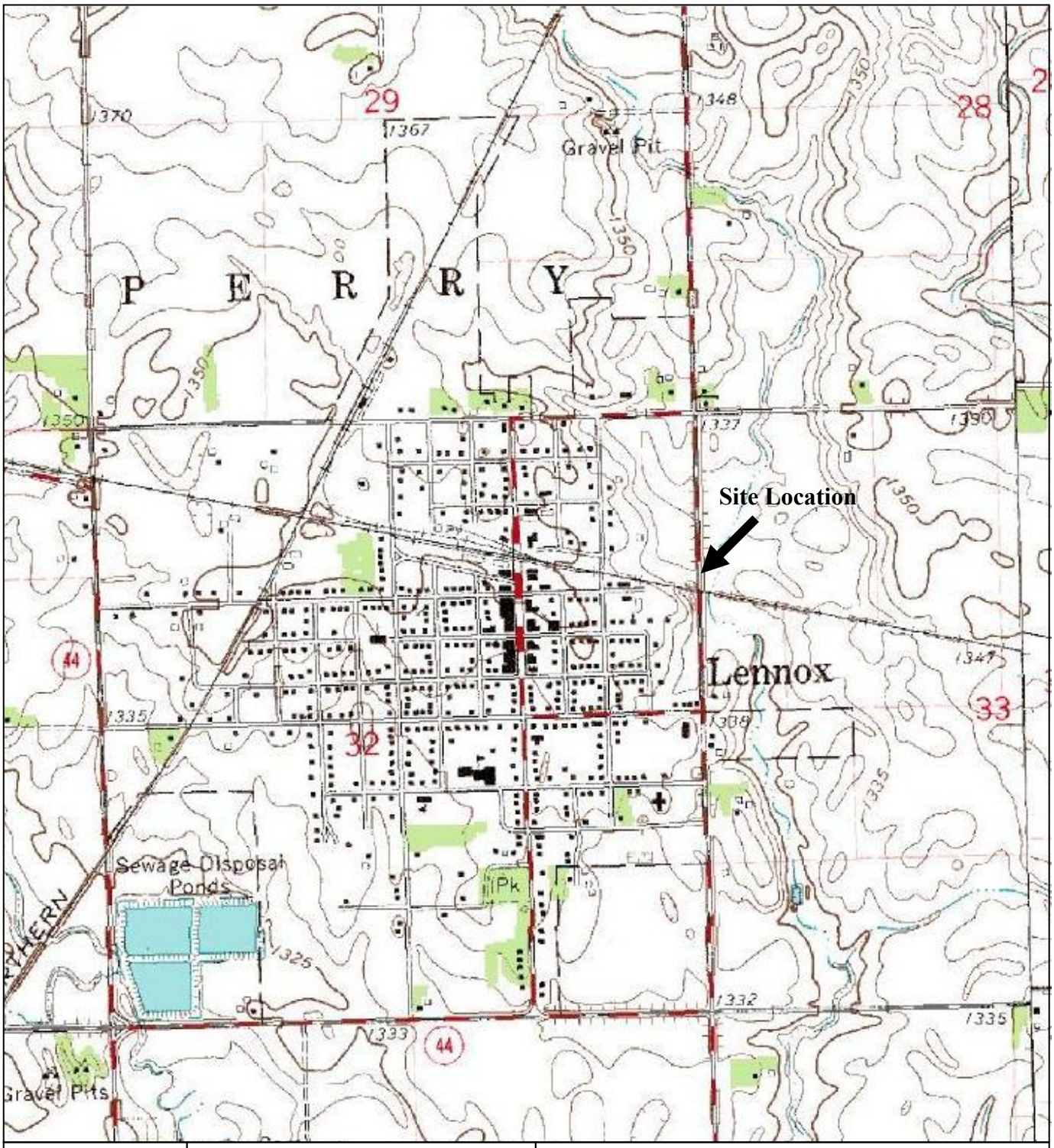
These tanks were installed in 1984. An impressed current system was installed in 1994. In early 1997 a spill report was submitted indicating that the tanks had accumulated water through a failed dialectric bushing. The DENR file was closed in 1998 when soil borings found no significant contamination beyond the tank basin.

As the USTs were being removed it was determined that the backfill was visibly contaminated and smelled of petroleum product. The tanks showed considerable corrosion and pitting.

Casey was razing the entire site and replacing all components, including the tank system and convenience store.

SIGNATURE _____ DATE _____

AFFLILIATION: _____



TPSS #18	Figure 1
Topographic Site Location Map Casey's General Store 416 N. Pine Street Lennox, SD	**SD Petroleum Release Compensation Fund** **Tank Pathology Study**