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REPORTS

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April 10, 2003

Mr. Stephen Weathers
Duke Energy Field Services, LP
310 Seventeenth Street, Suite 900
Denver, Colorado 80202

Re: Report on Groundwater Characterization Activities on the U-Bar Ranch, Lea County New Mexico.

Dear Mr. Weathers:

This letter reports the results of the groundwater characterization activities completed by Remediacon Incorporated (Remediacon) for Duke Energy Field Services, LP (DEFS) at the U-Bar Ranch in Lea County, New Mexico. The work was completed based upon a December 2, 2002 work plan that was approved by Mr. Larry Johnson of the New Mexico Oil Conservation Division. This report includes sections on:

- Relevant background information;
- A description of the field activities completed;
- Presentation and discussion of the investigative results; and
- Conclusions and a recommended remediation plan.

BACKGROUND INFORMATION

The purpose of this program was to assess whether organic and inorganic constituents originating from releases on the DEFS Lovington C-1 pipeline had migrated to the groundwater. Specific objectives included:

1. Characterize the lithology and chemical distribution of the unsaturated and uppermost saturated materials beneath the site.

2. Verify the depth to the uppermost saturated materials.

3. Assess for the presence of constituents potentially released from the Lovington C-1 pipeline on the U-Bar Ranch Property.

The study area is located south of Lovington, New Mexico on land owned by Mr. Darr Angell doing business as the U-Bar Ranch (Figure 1). The approximate coordinates are 32 degrees 50 minutes north and 103 degrees 19 minutes west in Sections 14, 23, and 24, Township 17 South, Range 36 East.

The study area consists of eleven soils remediation sites along the alignment of the DEFS C-1 line (1 through 11, Figure 2). DEFS has abandoned this line. Three additional sites (2-1, 2-2, 2-3, Figure 2) are scheduled for remediation in the near future.

Environmental Plus, Inc. (EPI) remediated the soils at above-referenced eleven sites. Sulfate was the primary constituent of concern within these soils. EPI generally removed the soils within each affected area to an approximate depth of 3 feet. The EPI remediation activities are documented in separate reports.

The site is underlain by the Ogallala Formation so the groundwater is believed to occur under unconfined (water table) conditions. EPI researched the permitted water wells within and adjacent to the study area as part of the original notification effort. The depths to water ranged from approximately 36 to 57 feet below land surface (bls) with an average depth of 46.5 feet. Total well depths ranged from 105 to 120 feet and averaged 112.5 feet bls.

The topography in the area generally falls toward the east-southeast (Figure 2). Groundwater is believed to flow sub-parallel to the topographic gradient because of its relatively shallow depth and unconfined nature.

SCOPE OF WORK

The scope of work used during the field investigation was originally proposed in the December 12, 2002. The activities completed included monitoring well installation, development and sampling. The activities are described below.

Monitoring Well Installation

Three groundwater monitoring wells were installed on December 6, 2002. The wells were installed at remediation sites selected by Mr. Angell. The well locations are shown relative to the remediation sites on both Figures 2 (topographic map) and 3 (aerial photograph). Wells MW-1 and MW-3 were installed outside of and on the southeastern side of their respective excavations based upon an assumed southeasterly groundwater flow direction. Well MW-2 was installed inside the excavation.

The wells were installed by Eades Drilling, a licensed New Mexico water well driller, using air rotary drilling. All activities were supervised by an experienced geologist. Cutting were inspected on a regular basis and split spoon samples were collected every 10 feet and screened for the presence of hydrocarbon constituents using a photoionization detector (PID). Lithologic logs were compiled for each boring and are included in Attachment 1.

Soil samples were collected at 10-foot intervals from 10 to 40 feet in MW-1, 10 to 30 feet in MW-3 and at 20 and 30 feet in MW-2. These samples were collected to quantify

sulfate concentrations in the soil at decreasing depths. The samples were submitted to Environmental Labs of Texas for analyses for the inorganic constituents chlorides, sulfates. The samples were also analyzed for the organic constituents benzene, toluene, ethylbenzene and total xylenes (BTEX) and total petroleum hydrocarbons in the gasoline (GRO) and diesel (DRO) ranges.

Each well was drilled to a depth approximately 10 feet below the first evidence of saturated materials. Two-inch, threaded, factory-slotted Schedule 40 PVC was then placed in the bottom well followed by blank casing to the surface. The annular space was backfilled with artificially-graded sand to a minimum depth of 1 foot above the top of the slotted PVC interval. The remaining annular space was then backfilled with hydrated bentonite. Well completion information is summarized in Table 1. Well completion forms including the approximate coordinates are included in Attachment 1.

Monitoring Well Development, Purging And Sampling,

All three wells were developed using a submersible pump on December 11, 2002. Well development consisted of evacuating a minimum of 10 casing volumes of water and then continuing development until the field parameters temperature, pH and conductivity stabilized. The well development forms are included in Attachment 2.

All three wells were initially sampled on December 13, 2002. A minimum of three casing volumes were removed from each well using a disposable bailer. Bailing continued until the temperature, pH and conductivity stabilized to within 10 percent and pH readings remain within 0.2 pH units for three consecutive readings. Each well was then sampled using a disposable bailer. The stabilized field parameters are included in Table 2.

Unfiltered samples were collected from each well upon stabilization for analysis for BTEX as well as calcium, magnesium, sodium, potassium, bicarbonate alkalinity, chlorides, sulfate and total dissolved solids. A windmill located northwest of MW-1 was also sampled and analyzed for the same constituent suite.

All of samples were placed in an ice-filled chest immediately upon collection. The samples were delivered directly to the analytical laboratory Environmental Labs of Texas in Midland Texas using standard chain-of-custody protocol immediately upon completion of sampling. All development and purge water was disposed of at an approved OCD facility. All cuttings generated during the drilling process were also disposed of in an appropriate fashion. The laboratory analytical reports are included in Attachment 3.

The December 2002 samples from wells MW-1 and MW-2 both contained detectable concentrations of benzene along with other hydrocarbon constituents(Table 3). The benzene concentration in well MW-2 was approximately 10 times higher than the concentration measured in MW-1 (0.02 mg/l in MW-2 verses 0.003 mg/l in MW-1). No

trip blank was included with the sampling episode, so DEFS requested that all of three wells be resampled to verify the origin of the benzene.

Resampling was completed on January 10, 2003 using the well development protocols described above. Field splits of the equilibrated samples were submitted to both Environmental Labs of Texas and Trace Analysis along with the trip blanks that were originally prepared and provided by each lab. The results, summarized in Table 3, again showed detectable concentrations of benzene in wells MW-1 and MW-2; however, the concentrations were reversed from the original sampling episode with MW-1 containing the higher benzene concentration. Examination of Table 3 also indicates that there was good agreement between the analytical results from the two labs. Neither of the trip blanks from the two laboratories for this episode contained any measurable concentration of benzene, toluene, ethylbenzene or total xylenes.

DEFS requested that a third round of sampling be completed to attempt to reconcile the concentration differences. This sampling episode was completed on January 23, 2003. Again the wells were developed and sampled using the same protocols as the previous two episodes. The samples were submitted to Environmental Labs of Texas along with the trip blank that was originally prepared and provided by the lab. These results, included in Table 3, closely matched the results from the January 10, 2003 episode. Remedicon concluded at this point that the data was sufficient to adequately characterize the site and generate a conceptual remediation plan since further monitoring of these wells would be completed.

PROJECT RESULTS

This section summarizes and describes the data collected. Conclusions based upon the data and a conceptual remediation program are presented in the subsequent section. The material properties and affected material distribution (or lack of it) are described first. The groundwater distribution and direction is discussed next. The final subsection summarizes the chemical information.

Material Properties

Examination of the lithologic logs in Attachment 1 shows that two uniform material types are present in the area investigated. The upper materials from the surface to approximate 20 feet below ground surface (bgs) consist of a dense, very pale orange caliche. The remainder of the materials are a well-sorted, very-fine-grained silty sand that grades from grayish orange to brown. The materials are described as becoming saturated between 34 to 37 feet.

There was no evidence of hydrocarbon impacts from the DEFS pipeline releases in the subsurface materials identified during drilling (Attachment 1). No hydrocarbon odors or

staining were noted in either the cuttings or the grab samples. In addition, all of the grab samples were measured at 0.0 parts per million (ppm) with the PID.

Table 4 summarizes the analytical results for the soil samples. The chloride concentrations were all below the 20 mg/kg detection limit. Sulfate concentrations peaked at 168 mg/kg from 20 to 22 feet in MW-1 and 79.5 mg/kg from 10 to 12 feet in MW-3. The chloride concentration was measured at 65 mg/kg in MW-2, the deepest interval from this boring submitted for laboratory analyses.

The organic constituents can be summarized as follows:

- No benzene was detected in any of the samples at a detection limit of 0.025 mg/kg;
- No toluene was detected in any of the samples at a detection limit of 0.025 mg/kg;
- Ethylbenzene was detected at 0.031 mg/kg in the 20-22 foot sample in MW-3 but was not detected at 0.025 mg/kg in any of the samples from any of the three wells.
- Xylenes were detected in samples from all three of the borings (Table 4); however, the concentrations were just slightly elevated relative to the 0.025 mg/kg detection limit.

Groundwater Flow Direction

The depths to groundwater measured in each well during each of the three episodes are summarized in Table 5. The measured depths to water were very consistent for the three monitoring episodes. The average depths to water in each well (Table 5, column 5) were then subtracted from the estimated ground elevation and the resulting approximate water table elevations are summarized in column 6 of Table 5. The shallower measured depth to water in MW-2 results in a higher estimated water table elevation relative to both MW-1 and MW-3. It is important to note that MW-2 is installed inside the excavation while MW-1 and MW-3 were placed outside the remediation footprint.

Groundwater Constituent Distribution

The organic and inorganic groundwater analytical results are summarized in Tables 3 and 6 respectively. Examination of Table 3 indicates the following relative to the organic constituent distribution in groundwater:

1. The samples from MW-3 and the windmill did not contain any of the BTEX constituents;

2. The initial sample from well MW-2 was elevated relative to the subsequent samples. The samples from January 10 and 23, 2003 contained benzene at the 0.001 mg/l detection limit. The January 23 sample also contained toluene and xylenes at the

0.001 mg/l detection limit. None of these constituents exceed the New Mexico Water Quality Control Commission (NMWQCC) groundwater standards.

3. The January 10 and 23, 2003 samples from well MW-1 contained benzene at concentrations in excess of the NMWQCC groundwater standards. Toluene, ethylbenzene and xylenes were also detected in the January 10 and 23, 2003 samples but at concentrations well below the NMWQCC groundwater standards.

There is no apparent trend in the inorganic constituents as measured in the December 2002 groundwater samples (Table 6). None of the constituents measured exceeded any relevant NMWQCC groundwater standards. The windmill, up gradient from all of the DEFS pipeline leaks, had the highest total dissolved solids concentration. Well MW-1, the well with the measured BTEX constituents had inorganic constituent concentrations that were similar to those measured in well MW-3. Well MW-2 may have an elevated sulfate concentration relative to the other three wells; however, the concentration is only approximately ¼ of the NMWQCC groundwater standard.

CONCLUSIONS AND CONCEPTUAL REMEDIATION PROGRAM

This sections presents the conclusions that are based upon the data collected during the field program. The final subsection presents the proposed remediation program.

Conclusions

Remediacon concludes the following based upon the data presented above:

1. EPI has removed the majority of residual mass associated with the DEFS pipeline releases based upon the low inorganic and organic constituent concentrations measured in the soil borings (Table 4) and the visual observations and PID measurements made during the advancement of the borings.

2. Dissolved inorganic constituents, specifically sulfates, either did not migrate to the groundwater or the amount of mass that reached the groundwater was so low that it has not substantially affected its potential uses.

3. Dissolved organic constituents migrated to the groundwater at one of the three locations evaluated. The relatively low concentrations measured in both the soils and groundwater indicate that a minimal quantity of mass has actually reached the saturated materials.

4. The removal of the source materials by EPI should stop or substantially lessen any future hydrocarbon constituent migration to the groundwater. Aerobic digestion should also remove the residual hydrocarbons from the unsaturated soils.

5. The relatively low organic constituent concentrations coupled with the high dissolved oxygen readings measured during the groundwater sampling episodes (Table 2) should result in aerobic biodegradation that eliminates the hydrocarbons a short distance down gradient from the source at MW-2, particularly since the source has been removed.

6. The hydrocarbon concentrations could impact a well if it was installed at the exact location of the MW-2 release. Natural mechanical and biodegradation process should remove the threat of the hydrocarbons a short distance away from the release point. In addition, the potential threat should disappear over time as the hydrocarbon constituent concentrations decline in the groundwater.

Recommended Remediation Program

Remediacon recommends a program of monitored natural attenuation at this site for the following reasons:

1. The majority of the source mass was removed by EPI;

2. The hydrocarbon constituents are readily biodegradable their concentrations are sufficiently low to prevent their interference with bacterial digestion; and

3. The dissolved oxygen values are at or near natural concentrations so active aerobic biodegradation should proceed at a high rate.

The program should include the following components:

- The water levels in all three wells should be measured in April, July and October 2003 to evaluate changes in the water table elevations.

- Monitor wells MW-1 and MW-2 should be sampled in April, July and October 2003. The samples should be analyzed for BTEX.

- The final April and July 2003 sampling data should be reviewed and transmitted to the OCD in a timely fashion.

- A report should be generated after the receipt and evaluation of the October 2003 groundwater results. The report should specifically address any changes in hydrocarbon concentrations over time and should recommend one of the following:

    a. Cessation of groundwater monitoring activities if the hydrocarbon constituents have declined to below background concentrations;

b. Continuation of periodic groundwater monitoring in the well(s) where the concentrations have remained constant or continue to decline; or

c. Initiation of additional active groundwater remediation measures if the concentrations have significantly increased or the site-specific land uses change.

Do not hesitate to contact me if you have any questions or comments on this work plan.

Respectfully Submitted,
REMEDIACOM INCORPORATED

Michael H. Stewart, P.E.
Principal Engineer

TABLES

Table 1 – Well Completion Information

Well	Date Installed	Approximate Casing Elevation	Approximate Ground Elevation	Total Well Depth	Screen Interval	Sand Interval	Bentonite Chips
MW-1	12/6/2002	3823.4	3820.5	50.5	30-50.5	28-50.5	0-28
MW-2	12/6/2002	3820.5	3818.0	47.0	27-42.5	24-40	0-24
MW-3	12/6/2002	3817.2	3814.5	52.0	32-47.5	30-52	0-30

Notes: All units in feet
MW-2 contained natural sand from 47 to 40 feet below ground surface.

Table 2 – Equilibrated Field Parameters

Well	Sampling Date	TEMP. (°C)	COND. (*m*S/cm)	pH (units)	DO mg/L	Turbidity (ntu)
MW-1	12/13/2002	18.5	0.509	7.81	8.58	999
MW-1	1/10/2003	18.3	0.369	6.68	8.50	999
MW-1	1/23/2003	18.1	0.351	7.23	9.75	999
MW-2	12/13/2002	18.9	0.680	7.79	9.66	742
MW-2	1/10/2003	18.5	0.441	6.99	9.33	645
MW-2	1/23/2003	18.2	0.414	7.24	10.18	0
MW-3	12/13/2002	18.1	0.443	7.95	10.66	880
MW-3	1/10/2003	17.5	0.305	7.72	10.53	999
MW-3	1/23/2003	17.4	0.283	7.39	12.40	393
Windmill	12/13/2002	17.2	0.683	7.35	9.16	0

Table 3 – Organic Constituent Results

		Benzene	Toluene	Ethylbenzene	Xylenes
NMWQCCGWS		0.01	0.75	0.75	0.62
MW-1	12/13/2002	0.003	<0.001	<0.001	<0.001
MW-1	1/10/2003	**0.041**	0.004	0.006	0.003
MW-1T	1/10/2003	**0.050**	0.0043	0.005	0.0034
MW-1	1/23/2003	**0.033**	0.004	0.006	0.005
MW-2	12/13/2002	**0.02**	<0.001	0.002	0.002
MW-2	1/10/2003	0.001	<0.001	<0.001	<0.001
MW-2T	1/10/2003	<0.001	<0.001	<0.001	<0.001
MW-2	1/23/2003	0.001	0.001	<0.001	0.001
MW-3	12/13/2002	<0.001	<0.001	<0.001	<0.001
MW-3	1/10/2003	<0.001	<0.001	<0.001	<0.001
MW-3T	1/10/2003	<0.005	<0.005	<0.005	<0.005
MW-3	1/23/2003	<0.001	<0.001	<0.001	<0.001
Windmill	12/12/2002	<0.001	<0.001	<0.001	<0.001

Notes: All units mg/l
Samples with T were analyzed by Trace Anaytical, All other analyzed by Environmental Labs of Texas.
Two trip blanks for 1/10/03 sampling episode were <0.001 for BTEX
NMWQCCGWS: New Mexico Water Quality Control Commission Groundwater Standards. Samples that exceed standards are bolded.

Table 4 - U-Bar Ranch Soil Sampling Results

U-Bar Ranch Inorganic Soil Sampling Results

Well	Sample Depth	Chloride	Sulfate
MW-1	10-12	<20	73
MW-1	20-22	<20	168
MW-1	30-32	<20	56
MW-1	40-42	<20	6.5
MW-2	20-22	<20	37
MW-2	30-32	<20	65
MW-3	10-12	<20	79.5
MW-3	20-22	<20	3
MW-3	30-32	<20	5

All units mg/kg

U-Bar Ranch Organic Soil Sampling Results

Well	Sample Depth	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	10-12	<0.025	<0.025	<0.025	<0.025
MW-1	20-22	<0.025	<0.025	<0.025	<0.025
MW-1	30-32	<0.025	<0.025	<0.025	0.053
MW-1	40-42	<0.025	<0.025	<0.025	0.053
MW-2	20-22	<0.025	<0.025	<0.025	0.074
MW-2	30-32	<0.025	<0.025	<0.025	<0.025
MW-3	10-12	<0.025	<0.025	<0.025	<0.025
MW-3	20-22	<0.025	<0.025	0.031	0.069
MW-3	30-32	<0.025	<0.025	<0.025	0.028

All units mg/kg
DRO and GRO not detected in any samples at 10 mg/kg

Table 5 – Water Table Measurements and Estimated Elevations

Well	12/13/02 Depth to Water	1/10/03 Depth to Water	1/23/03 Depth to Water	Average Depth to Water	Estimated Water Table Elevation
MW-1	41.14	41.18	41.19	41.17	3782.2
MW-2	34.79	34.82	34.82	34.81	3785.7
MW-3	39.78	39.81	39.81	39.8	3777.4

All units in feet

Table 6 – Inorganic Constituent Results

	Calcium	Magnesium	Sodium	Potassium	Bicarbonate	Chloride	Sulfate	TDS
NMWQCCGWS						250	600	1000
MW-1	61.5	8	42.6	4.86	166	33.7	87.0	351
MW-2	72.0	9.98	72.9	4.66	168	48.7	167	535
MW-3	45.6	7.61	48.0	3.39	162	19.5	67.6	339
Windmill	83.6	16.2	52.1	8.78	206	48.7	104	658

Notes: All units mg/l
NMWQCCGWS: New Mexico Water Quality Control Commission Groundwater Standards. No standards exceeded

FIGURES

Figure 1 – Study Area Location
U-Bar Ranch Groundwater Characterization

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: 8/01

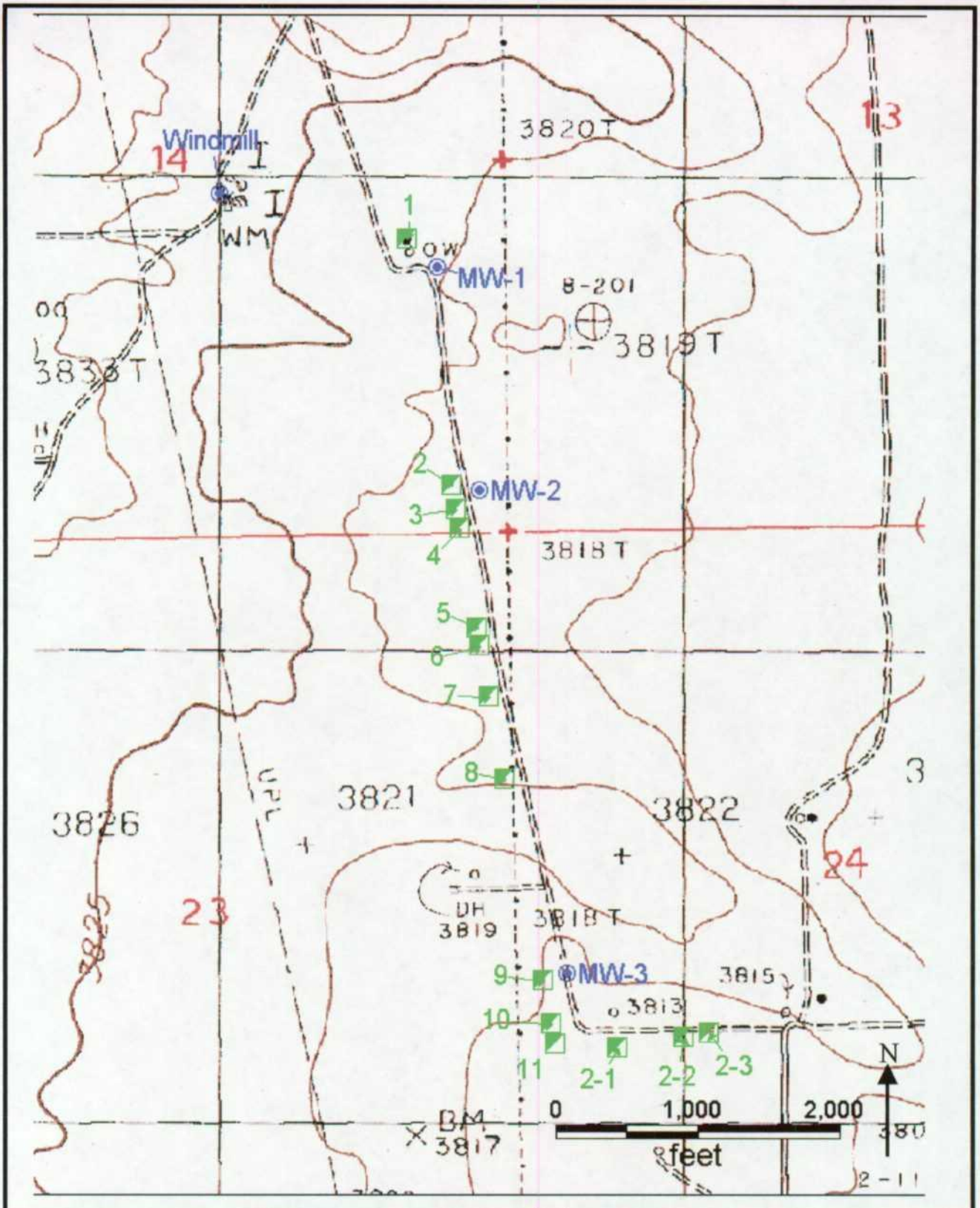


Figure 2 – Remediation Site and Well Locations
U-Bar Ranch Groundwater Characterization

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: 8/01

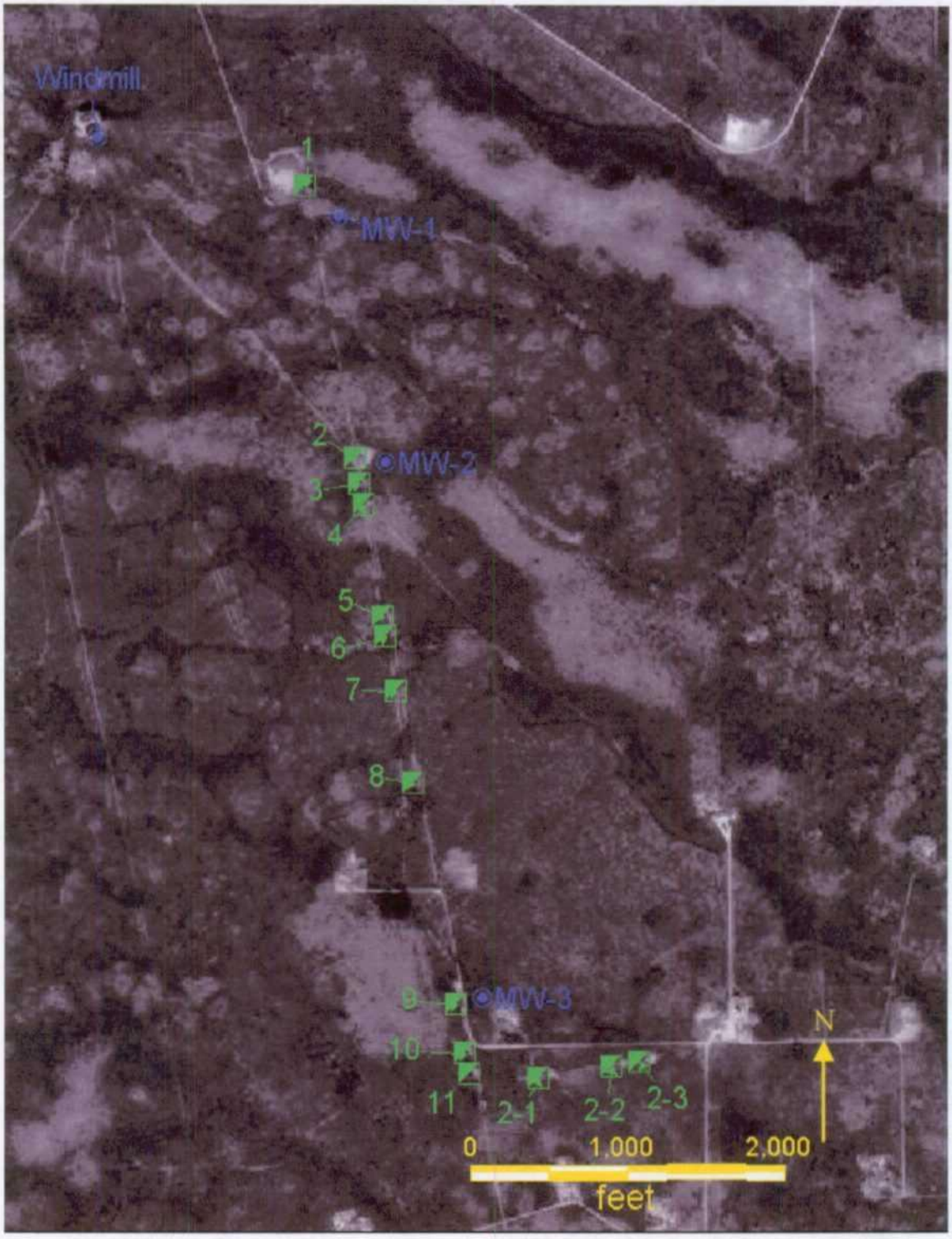


Figure 3 – Aerial Photograph With Site Components
U-Bar Ranch Groundwater Characterization

Duke Energy Field Services

DRAWN BY: MHS
REVISED:
DATE: 8/01

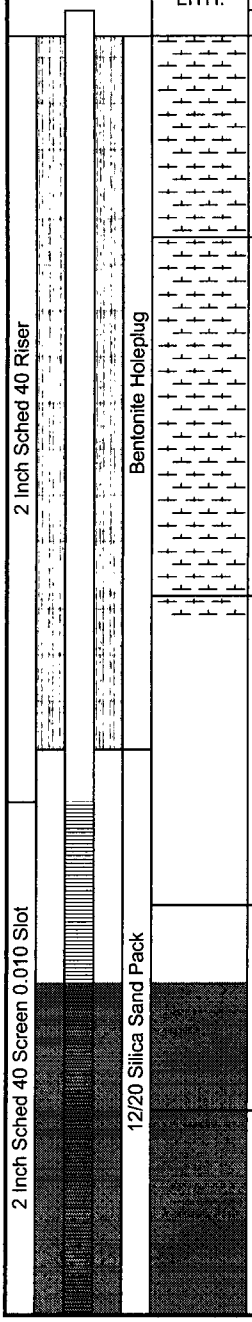
ATTACHMENT 1

WELL BORING LOGS

LITHOLOGIC LOG (MONITORING WELL)

TRIDENT ENVIRONMENTAL

MONITORING WELL NO:	MW-1	TOTAL DEPTH:	50.5 Feet
SITE ID:	C 1 Line	CLIENT:	Duke Energy Field Services
SURFACE ELEVATION:		COUNTY:	Lea
CONTRACTOR:	Eades Drilling	STATE:	New Mexico
DRILLING METHOD:	Air Rotary	LOCATION:	U Bar Ranch
START DATE:	12/6/2002	FIELD REP.:	J. Fergerson
COMPLETION DATE:	12/6/2002	FILE NAME:	
COMMENTS:	Latitude = N 32 49' 57.7"		
	Longitude = W 103 19' 3.3"		

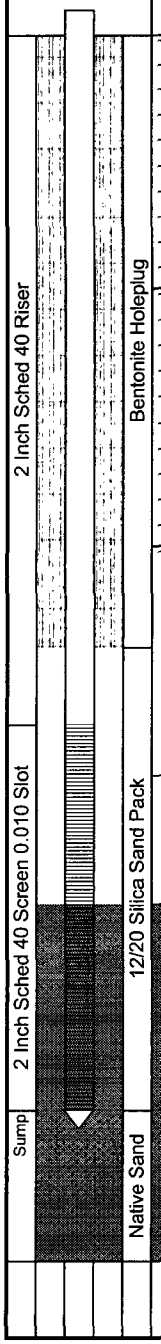


LITH.	USCS	FROM	TO	TYPE	PID	DEPTH	LITHOLOGIC DESCRIPTION: LITHOLOGY, COLOR, GRAIN SIZE, SORTING, ROUNDING, CONSOL., DIST. FEATURES
	CAL					5	Caliche, v pale orange-grayish orange pink, weathered-dense no odor.
	CAL	10	12	S Spoon	0.0 ppm	10	Caliche, v pale orange-pale yellowish orange, weathered-dense, no odor.
	CAL	20	22	S Spoon	0.0 ppm	15	
						20	
	SM					25	Silty Sand, vf grain, grayish orang pink-lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, no odor.
	SM	30	32	S Spoon	0.0 ppm	30	
	SM					35	Silty Sand, vf grain, lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, v moist, no odor. Encountered Groundwater @ 37 Feet
	SM	40	42	S Spoon	0.0 ppm	40	
	SM					45	Silty Sand, vf grain, lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, wet, no odor.
						50	

LITHOLOGIC LOG (MONITORING WELL)

TRIDENT ENVIRONMENTAL

MONITORING WELL NO:	MW-2	TOTAL DEPTH:	47 Feet
SITE ID:	C 1 Line	CLIENT:	Duke Energy Field Services
SURFACE ELEVATION:		COUNTY:	Lea
CONTRACTOR:	Eades Drilling	STATE:	New Mexico
DRILLING METHOD:	Air Rotary	LOCATION:	U Bar Ranch
START DATE:	12/6/2002	FIELD REP.:	J. Fergerson
COMPLETION DATE:	12/6/2002	FILE NAME:	
COMMENTS:	Latitude = N 32 49' 42.4"		
	Longitude = W 103 19' 0.1"		

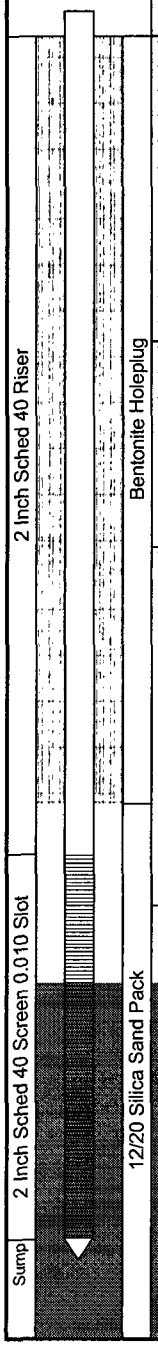


LITH.	USCS	FROM	TO	TYPE	PID	DEPTH	LITHOLOGIC DESCRIPTION: LITHOLOGY, COLOR, GRAIN SIZE, SORTING, ROUNDING, CONSOL., DIST. FEATURES
	CAL					5	Caliche, v pale orange-grayish orange pink, weathered-dense no odor.
						10	
	CAL	10	12	S Spoon	0.0 ppm	15	Caliche, v pale orange-grayish orange pink, weathered-dense no odor.
						20	
	SM	20	22	S Spoon	0.0 ppm	25	Silty Sand, vf grain, grayish orange pink-lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, no odor.
	SM	30	32	S Spoon	0.0 ppm	30	Silty Sand, vf grain, lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, no odor.
							Encountered Groundwater @ 34 Feet
	SM					35	Silty Sand, vf grain, lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, wet, no odor.
						40	
						45	
							TD Boring @ 47 Feet
						50	

LITHOLOGIC LOG (MONITORING WELL)

TRIDENT ENVIRONMENTAL

MONITORING WELL NO:	MW-3	TOTAL DEPTH:	52 Feet
SITE ID:	C 1 Line	CLIENT:	Duke Energy Field Services
SURFACE ELEVATION:		COUNTY:	Lea
CONTRACTOR:	Eades Drilling	STATE:	New Mexico
DRILLING METHOD:	Air Rotary	LOCATION:	U Bar Ranch
START DATE:	12/6/2002	FIELD REP.:	J. Fergerson
COMPLETION DATE:	12/6/2002	FILE NAME:	
COMMENTS:	Latitude = N 32 49' 9.1"		
	Longtitude = W 103 18' 53.5"		

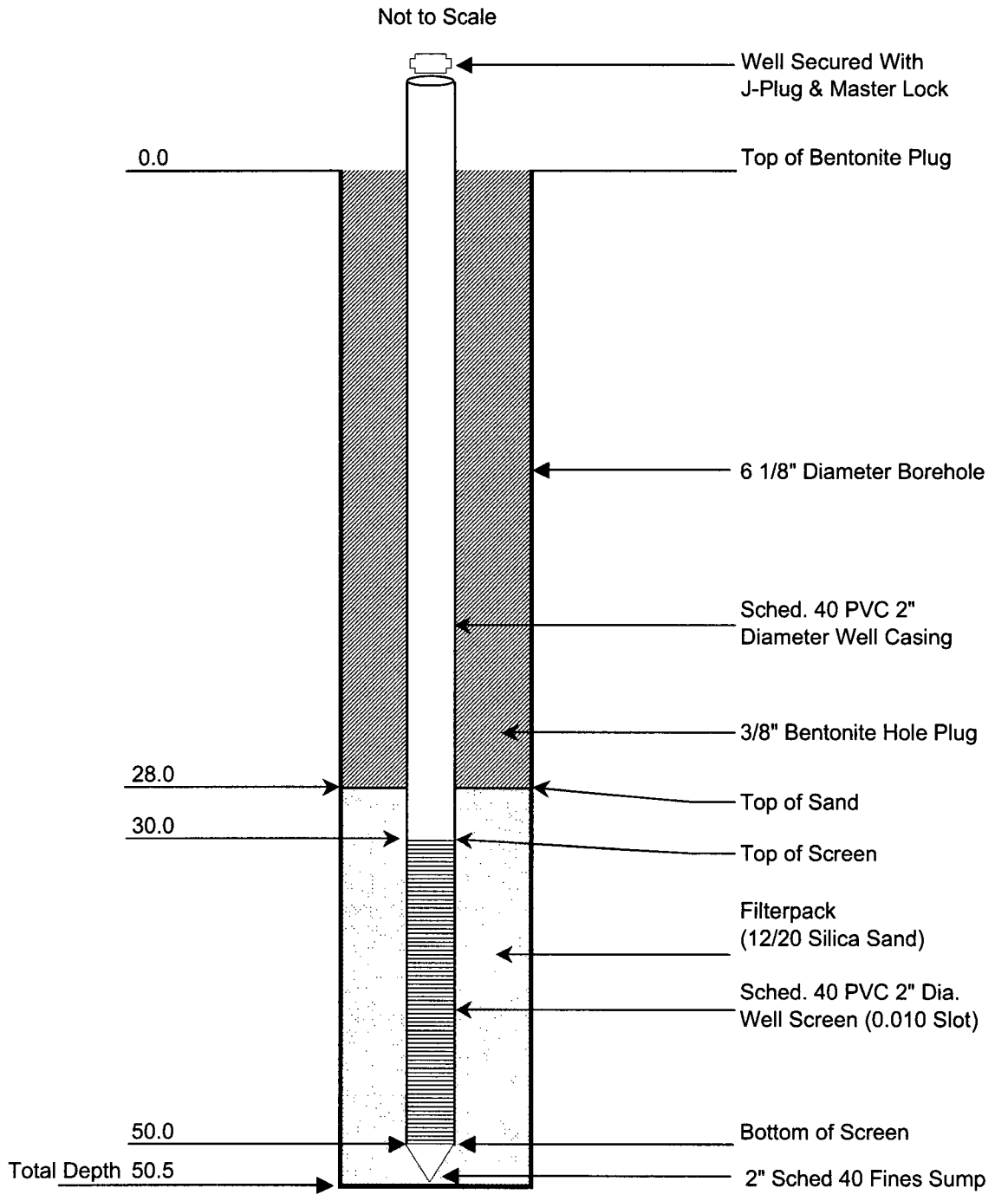


LITH.	USCS	FROM	TO	TYPE	PID	DEPTH	LITHOLOGIC DESCRIPTION: LITHOLOGY, COLOR, GRAIN SIZE, SORTING, ROUNDING, CONSOL., DIST. FEATURES
	CAL	10	12	S Spoon	0.0 ppm	5	Caliche, v pale orange-grayish orange pink, weathered-dense no odor.
						10	
	CAL					15	Caliche, v pale orange-grayish orange pink, dense-weathered no odor.
						20	
	SM	20	22	S Spoon	0.0 ppm	25	Silty Sand, vf grain, grayish orange pink-lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, no odor.
						30	
		30	32	S Spoon	0.0 ppm	35	Silty Sand, vf grain, lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, no odor. Encountered Groundwater @ 37 Feet
	SM					40	
	SM					45	Silty Sand, vf grain, lt brown, unconsol, w sorted, interbedded w/mod-well cemented vf grain sand, wet, no odor.
						50	

MONITORING WELL NO: MW-3 TOTAL DEPTH: 52 Feet

LITH.	SAMPLE					DEPTH	LITHOLOGIC DESCRIPTION: LITHOLOGY, COLOR, GRAIN SIZE, SORTING, ROUNDING, CONSOL., DIST. FEATURES
	USCS	FROM	TO	TYPE	PID		
Sand	SM						TD Boring @ 52 Feet
						55	
						60	
						65	
						70	
						75	
						80	
						85	
						90	
						95	
						100	
						105	
						110	

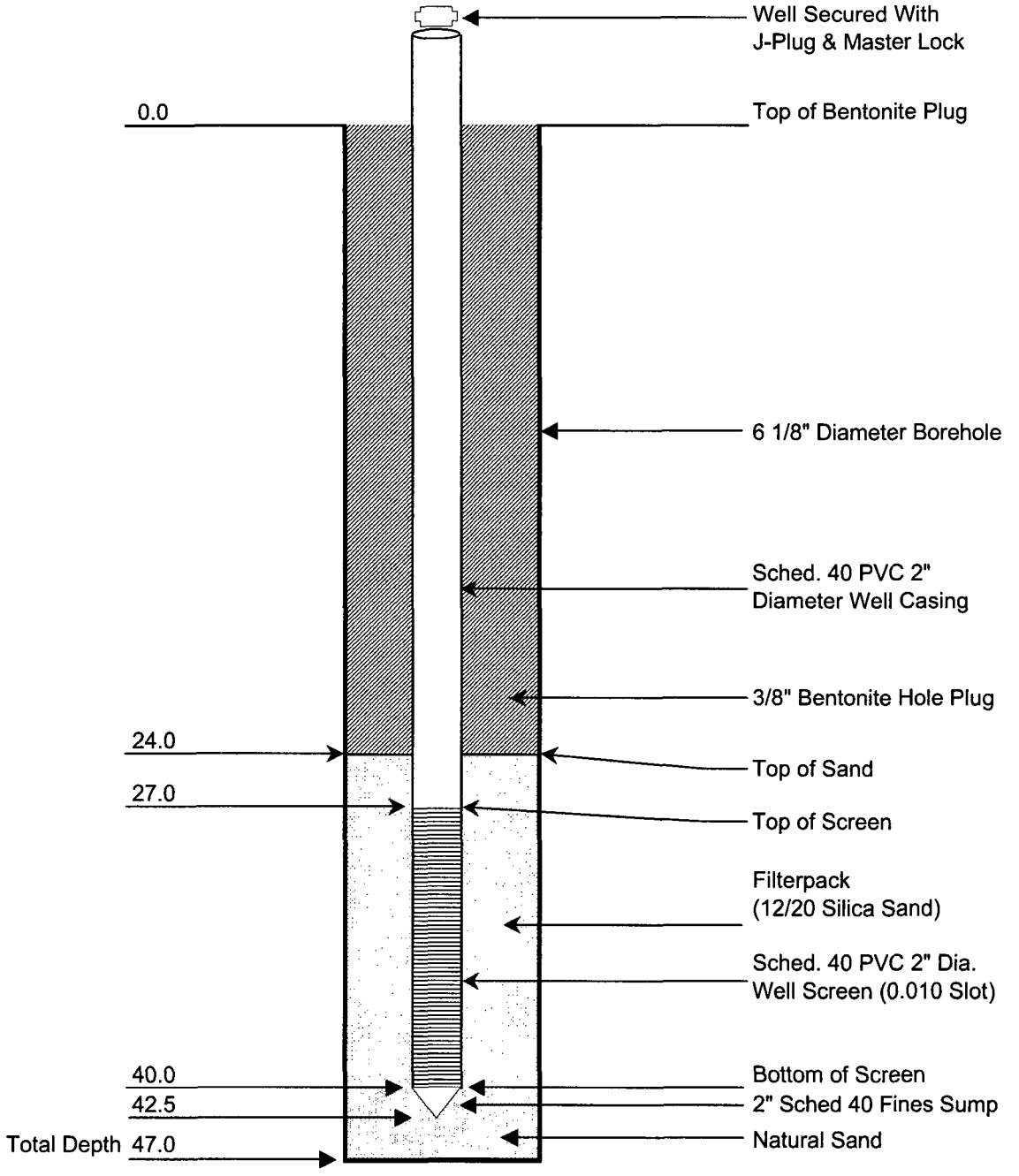
MONITORING WELL CONSTRUCTION DIAGRAM (MW-1)



TRIDENT ENVIRONMENTAL	SITE: Duke Energy Field Services-C 1 Line		**MW-1 Monitoring Well Construction Diagram**
	DATE: 01/27/03	REV. NO.: 1	
	AUTHOR: JMF	DRAWN BY: JMF	
	CK'D BY:	FILE: Well Construction	

MONITORING WELL CONSTRUCTION DIAGRAM (MW-2)

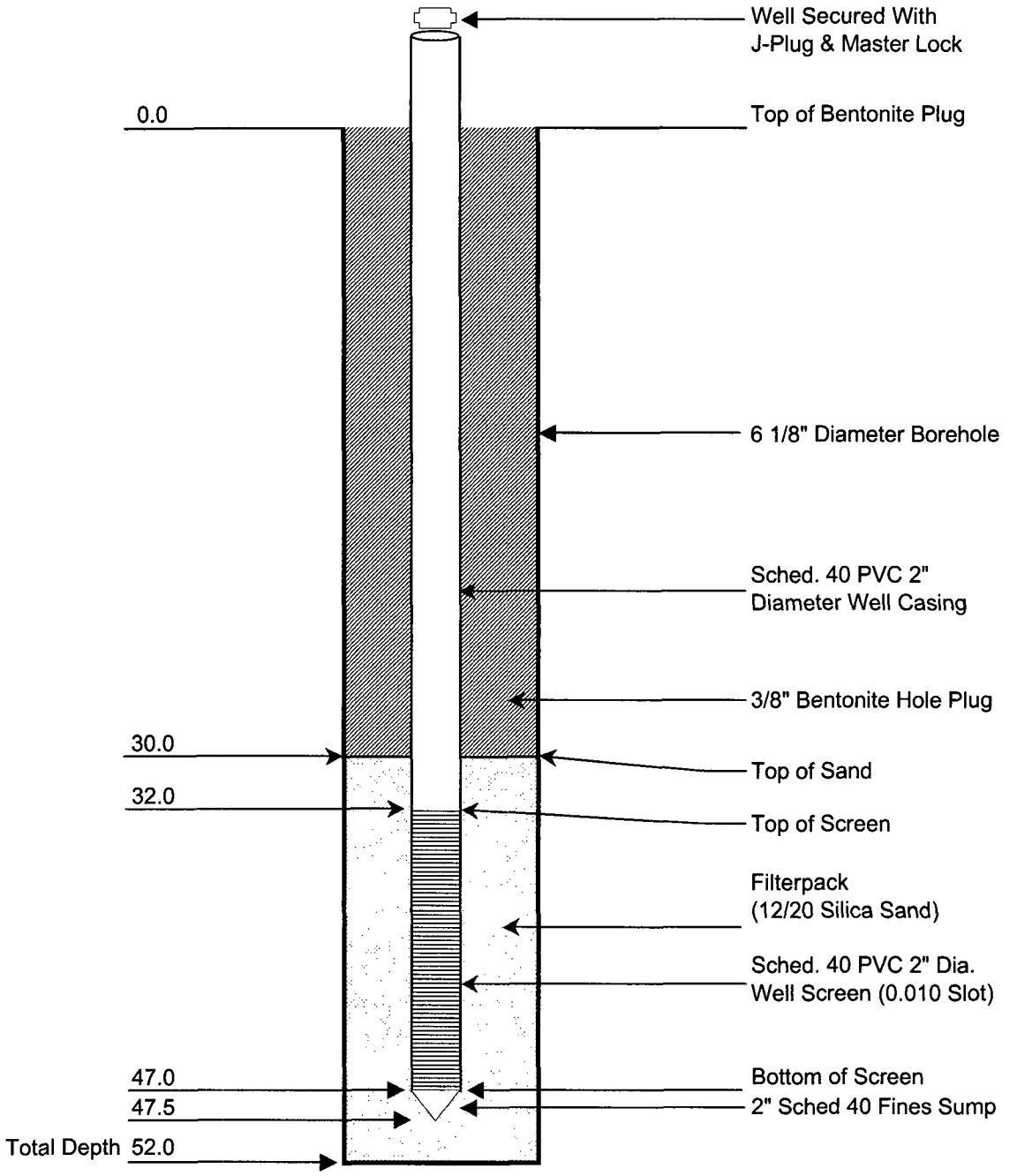
Not to Scale



TRIDENT ENVIRONMENTAL	SITE: Duke Energy Field Services-C 1 Line		**MW-2 Monitoring Well Construction Diagram**
	DATE: 01/27/03	REV. NO.: 1	
	AUTHOR: JMF	DRAWN BY: JMF	
	CK'D BY:	FILE: Well Construction	

MONITORING WELL CONSTRUCTION DIAGRAM (MW-3)

Not to Scale



TRIDENT ENVIRONMENTAL	SITE: Duke Energy Field Services-C 1 Line		**MW-3 Monitoring Well Construction Diagram**
	DATE: 01/27/03	REV. NO.: 1	
	AUTHOR: JMF	DRAWN BY: JMF	
	CK'D BY:	FILE: Well Construction	

ATTACHMENT 2

WELL DEVELOPMENT FORMS

WELL DEVELOPMENT DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-1**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 12/11/2002
PROJECT NO. F-108
DEVELOPER: Littlejohn

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 2-Stage Purge Pump
SAMPLING METHOD: ☐ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE DEVELOPING THE WELL:
☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 53.38 Feet
DEPTH TO WATER: 41.12 Feet
HEIGHT OF WATER COLUMN: 12.26 Feet
WELL DIAMETER: 2.0 Inch

20.0 Minimum Gallons to purge 10 well volumes (Water Column Height x 1.63)

TIME	VOLUME PURGED	TEMP. °C	COND. *m* S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
12:59	--	--	--	--	--	--	Begin Hand Bailing
13:03	3	18.3	0.498	7.58	7.40	754	Sal = 0.02%
13:07	6	18.6	0.493	7.60	8.59	306	Sal = 0.02%
13:10	9	18.7	0.489	7.60	8.77	63	Sal = 0.02%
13:14	12	18.7	0.488	7.61	8.67	0	Sal = 0.02%
13:18	15	18.8	0.487	7.60	8.80	0	Sal = 0.02%
13:22	18	18.8	0.487	7.60	8.81	0	Sal = 0.02%
13:25	21	18.8	0.487	7.61	8.89	0	Sal = 0.02%
13:29	24	18.8	0.491	7.59	9.35	111	Sal = 0.02% *Raised pump 3 ft
13:33	27	18.8	0.488	7.61	8.8	0	Sal = 0.02%
13:37	30	18.7	0.486	7.61	8.76	0	Sal = 0.02%
0:38	:Total Time (hr:min)		**30**	:Total Vol (gal)		**0.79**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.:
ANALYSES:
COMMENTS: Moving the pump in the well affected only DO and Turbidity

WELL DEVELOPING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-2**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 12/11/2002
PROJECT NO. F-108
DEVELOPER: Littlejohn

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 2-Stage Purge Pump
SAMPLING METHOD: ☐ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE DEVELOPING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 44.97 Feet
DEPTH TO WATER: 34.76 Feet
HEIGHT OF WATER COLUMN: 10.21 Feet
WELL DIAMETER: 2.0 Inch

16.7 Minimum Gallons to purge 10 well volumes (Water Column Height x 1.63)

TIME	VOLUME PURGED	TEMP. °C	COND. *m* S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
11:46	--	--	--	--	--	--	Begin Hand Bailing
11:49	3	18.1	0.609	7.72	9.62	212	Sal = 0.02%
11:53	6	18.6	0.594	7.63	9.95	22	Sal = 0.02%
11:56	9	18.8	0.615	7.59	10.04	0	Sal = 0.02%
11:59	12	18.8	0.626	7.59	9.95	0	Sal = 0.02%
12:02	15	18.9	0.632	7.58	10.15	0	Sal = 0.02%
12:07	18	18.8	0.641	7.57	10.09	0	Sal = 0.02% Raised pump 3 ft
12:12	21	18.8	0.611	7.60	10.09	297	Sal = 0.02% Lowered pump 3 ft
12:15	24	18.9	0.641	7.58	10.06	0	Sal = 0.02%
12:18	27	18.9	0.646	7.56	10.06	0	Sal = 0.02%
0:32	:Total Time (hr:min)		**27**	:Total Vol (gal)		**0.84**	:Flow Rate (gal/min)

SAMPLE NO.:
ANALYSES:
COMMENTS: Moving the pump in the well affected only Turbidity

WELL DEVELOPMENT DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-3**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 12/11/2002
PROJECT NO. F-108
DEVELOPER: Littlejohn

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: 2-Stage Purge Pump
SAMPLING METHOD: ☐ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE DEVELOPING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 50.20 Feet
DEPTH TO WATER: 39.75 Feet
HEIGHT OF WATER COLUMN: 10.45 Feet
WELL DIAMETER: 2.0 Inch

17.1 Minimum Gallons to purge 10 well volumes (Water Column Height x 1.63)

TIME	VOLUME PURGED	TEMP. °C	COND. *m* S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
10:34	--	--	--	--	--	--	Begin Hand Bailing
10:37	3	16.9	0.480	7.78	8.40	855	Sal = 0.01%
10:41	6	17.7	0.440	7.68	10.04	215	Sal = 0.01%
10:45	9	18.0	0.431	7.67	10.10	6	Sal = 0.01%
10:48	12	17.9	0.429	7.68	10.73	0	Sal = 0.01%
10:52	15	18.0	0.428	7.67	10.76	0	Sal = 0.01%
10:55	18	17.9	0.429	7.67	10.88	0	Sal = 0.01%
10:59	21	18.1	0.429	7.67	11.00	145	Sal = 0.01% *Raised pump 3 ft
11:05	23	17.8	0.427	7.67	11.05	0	Sal = 0.01% *Well pumped off
11:09	26	18.1	0.428	7.66	11.08	179	Sal = 0.01% *Lowered pump 3 ft
11:13	29	18.1	0.429	7.67	11.15	0	Sal = 0.01%
0:39	:Total Time (hr:min)		**29**	:Total Vol (gal)		**0.74**	:Flow Rate (gal/min)

SAMPLE NO.:
ANALYSES:
COMMENTS: Moving the pump in the well affected only Turbidity

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-1**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 12/13/2002
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 53.38 Feet
DEPTH TO WATER: 41.14 Feet
HEIGHT OF WATER COLUMN: 12.24 Feet
WELL DIAMETER: 2.0 Inch

6.0 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m*S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
8:06	--	--	--	--	--	--	Begin Hand Bailing
8:09	2	18.3	0.509	7.77	8.22	999	Sal = 0.02%
8:15	4	18.3	0.508	7.80	8.37	999	Sal = 0.02%
8:20	6	18.2	0.506	7.81	8.50	999	Sal = 0.02%
8:28	8	18.5	0.509	7.81	8.58	999	Sal = 0.02%
0:22	:Total Time (hr:min)		**8**	:Total Vol (gal)		**0.36**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 021213 0835

ANALYSES: BTEX (8021-B), Ca, Mg, Na, K, HCO3, Cl, SO4, & TDS

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-2**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 12/13/2002
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 44.97 Feet
DEPTH TO WATER: 34.79 Feet
HEIGHT OF WATER COLUMN: 10.18 Feet
WELL DIAMETER: 2.0 Inch

5.0 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m*S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
9:09	--	--	--	--	--	--	Begin Hand Bailing
9:13	2	18.8	0.661	7.79	9.63	999	Sal = 0.02%
9:20	4	18.9	0.676	7.79	9.69	999	Sal = 0.02%
9:28	6	18.9	0.680	7.79	9.66	742	Sal = 0.02%
0:19	:Total Time (hr:min)		**6**	:Total Vol (gal)		**0.31**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 021213 0935

ANALYSES: BTEX (8021-B), Ca, Mg, Na, K, HCO3, Cl, SO4, & TDS

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-3**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 12/13/2002
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 50.20 Feet
DEPTH TO WATER: 39.78 Feet
HEIGHT OF WATER COLUMN: 10.42 Feet
WELL DIAMETER: 2.0 Inch

5.1 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m*S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
10:08	--	--	--	--	--	--	Begin Hand Bailing
10:13	2	18.1	0.443	7.94	10.47	999	Sal = 0.01%
10:20	4	18.1	0.444	7.95	10.54	999	Sal = 0.01%
10:26	6	18.1	0.443	7.95	10.66	880	Sal = 0.01%
0:18	:Total Time (hr:min)		**6**	:Total Vol (gal)		**0.33**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 021213 1035

ANALYSES: BTEX (8021-B), Ca, Mg, Na, K, HCO3, Cl, SO4, & TDS

COMMENTS:

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **Windmill**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 12/12/2002
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☐ Hand Bailed ☑ Pump If Pump, Type: Windmill Operation
SAMPLING METHOD: ☐ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other:

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:
☑ Gloves ☐ Alconox ☐ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☐ Disposal Facility

TOTAL DEPTH OF WELL: Unknown Feet
DEPTH TO WATER: Unknown Feet
HEIGHT OF WATER COLUMN: Unknown Feet
WELL DIAMETER: 5.0 Inch

NA Minimum Gallons to purge 3 well volumes (Water Column Height x 1.96)

TIME	VOLUME PURGED	TEMP. °C	COND. *m*S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
14:15	0	17.2	0.683	7.35	9.16	0	Sal = 0.02%
0:00	:Total Time (hr:min)		**0**	:Total Vol (gal)		**NA**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 021212 1415
ANALYSES: BTEX (8021-B), Ca, Mg, Na, K, HCO3, Cl, SO4, & TDS
COMMENTS:

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-1**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 1/10/2003
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 53.38 Feet
DEPTH TO WATER: 41.18 Feet
HEIGHT OF WATER COLUMN: 12.20 Feet
WELL DIAMETER: 2.0 Inch

6.0 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m* S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
12:00	--	--	--	--	--	--	Begin Hand Bailing
12:07	2	18.0	0.366	6.47	8.93	999	Sal = 0.01 %
12:15	4	18.2	0.368	6.54	8.74	999	Sal = 0.01 %
12:25	6	18.3	0.368	6.62	8.62	999	Sal = 0.01 %
12:34	8	18.3	0.369	6.68	8.50	999	Sal = 0.01 %
0:34	:Total Time (hr:min)		**8**	:Total Vol (gal)		**0.23**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 030110 1250

ANALYSES: BTEX (8021-B)

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-2**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 1/10/2003
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 44.97 Feet
DEPTH TO WATER: 34.82 Feet
HEIGHT OF WATER COLUMN: 10.15 Feet
WELL DIAMETER: 2.0 Inch

5.0 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m*S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
10:52	--	--	--	--	--	--	Begin Hand Bailing
10:58	2	18.3	0.412	7.41	9.39	474	Sal = 0.01%
11:07	4	18.5	0.424	7.17	9.34	637	Sal = 0.01%
11:15	6	18.3	0.441	7.03	9.25	836	Sal = 0.01%
11:23	8	18.5	0.441	6.99	9.33	645	Sal = 0.01%
0:31	:Total Time (hr:min)		**8**	:Total Vol (gal)		**0.26**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 030110 1130

ANALYSES: BTEX (8021-B)

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-3**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 1/10/2003
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 50.20 Feet
DEPTH TO WATER: 39.81 Feet
HEIGHT OF WATER COLUMN: 10.39 Feet
WELL DIAMETER: 2.0 Inch

5.1 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m*S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
9:40	--	--	--	--	--	--	Begin Hand Bailing
9:49	2	17.5	0.305	7.73	10.33	999	Sal = 0.01%
10:00	4	17.5	0.305	7.71	10.51	999	Sal = 0.01%
10:11	6	17.5	0.305	7.72	10.53	999	Sal = 0.01%
0:31	:Total Time (hr:min)		**6**	:Total Vol (gal)		**0.19**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 030110 1035 1025

ANALYSES: BTEX (8021-B)

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-1**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 1/23/2003
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 53.38 Feet
DEPTH TO WATER: 41.19 Feet
HEIGHT OF WATER COLUMN: 12.19 Feet
WELL DIAMETER: 2.0 Inch

6.0 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m* S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
10:17	--	--	--	--	--	--	Begin Hand Bailing
10:24	2	18.1	0.353	7.24	9.73	999	Sal = 0.01%
10:32	4	18.2	0.354	7.15	9.86	999	Sal = 0.01%
10:41	6	17.9	0.352	7.25	9.78	999	Sal = 0.01%
10:50	8	18.1	0.351	7.23	9.75	999	Sal = 0.01%
0:33	:Total Time (hr:min)		**8**	:Total Vol (gal)		**0.24**	:Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 030123 1055

ANALYSES: BTEX (8021-B)

COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-2**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 1/23/2003
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 44.97 Feet
DEPTH TO WATER: 34.82 Feet
HEIGHT OF WATER COLUMN: 10.15 Feet
WELL DIAMETER: 2.0 Inch

5.0 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m*S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
9:24	--	--	--	--	--	--	Begin Hand Bailing
9:29	2	18.2	0.382	7.29	10.39	88	Sal = 0.01%
9:37	4	18.2	0.395	7.27	10.31	77	Sal = 0.01%
9:44	6	18.2	0.411	7.28	10.21	12	Sal = 0.01%
9:51	8	18.2	0.414	7.24	10.18	0	Sal = 0.01%
0:27 :Total Time (hr:min)			**8** :Total Vol (gal)			**0.30** :Flow Rate (gal/min)	

SAMPLE NO.: Collected Sample No.: 030123 1000
ANALYSES: BTEX (8021-B)
COMMENTS: _____

WELL SAMPLING DATA FORM

CLIENT: Duke Energy Field Services
WELL ID: **MW-3**
SITE NAME: U-Bar Ranch (C-1-Line)
DATE: 1/23/2003
PROJECT NO. F-108
SAMPLER: Littlejohn

PURGING METHOD: ☑ Hand Bailed ☐ Pump If Pump, Type: _____

SAMPLING METHOD: ☑ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: _____

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☑ Gloves ☑ Alconox ☑ Distilled Water Rinse ☐ Other: _____

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☑ Disposal Facility

TOTAL DEPTH OF WELL: 50.20 Feet
DEPTH TO WATER: 39.81 Feet
HEIGHT OF WATER COLUMN: 10.39 Feet
WELL DIAMETER: 2.0 Inch

5.1 Minimum Gallons to purge 3 well volumes (Water Column Height x 0.49)

TIME	VOLUME PURGED	TEMP. °C	COND. *m* S/cm	pH	DO mg/L	Turb	PHYSICAL APPEARANCE AND REMARKS
8:31	--	--	--	--	--	--	Begin Hand Bailing
8:38	2	17.6	0.291	7.28	11.88	439	Sal = 0.01%
8:45	4	17.6	0.286	7.37	12.36	519	Sal = 0.01%
8:52	6	17.4	0.283	7.39	12.40	393	Sal = 0.01%

0:21 :Total Time (hr:min) **6** :Total Vol (gal) **0.28** :Flow Rate (gal/min)

SAMPLE NO.: Collected Sample No.: 030123 0900
ANALYSES: BTEX (8021-B)
COMMENTS: _____

ATTACHMENT 3

LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

Prepared for:

DALE LITTLEJOHN
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Project:	DEFS: C-1-Line
PO#:	
Order#:	G0205254
Report Date:	12/19/2002

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708
689-4578

Order#: G0205254
Project: F-108
Project Name: DEFS: C-1-Line
Location: U-Bar Ranch

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0205254-01	Windmill	WATER	12/12/02 14:15	12/13/02 16:11	See COC	Ice
	Lab Testing:	Rejected: No		Temp: -3 C		
	8021B/5030 BTEX					
	Anions					
	Cations					
	Total Dissolved Solids (TDS)					
0205254-02	MW-1	WATER	12/13/02 8:35	12/13/02 16:11	See COC	Ice
	Lab Testing:	Rejected: No		Temp: -3 C		
	8021B/5030 BTEX					
	Anions					
	Cations					
	Total Dissolved Solids (TDS)					
0205254-03	MW-2	WATER	12/13/02 9:35	12/13/02 16:11	See COC	Ice
	Lab Testing:	Rejected: No		Temp: -3 C		
	8021B/5030 BTEX					
	Anions					
	Cations					
	Total Dissolved Solids (TDS)					
0205254-04	MW-3	WATER	12/13/02 10:35	12/13/02 16:11	See COC	Ice
	Lab Testing:	Rejected: No		Temp: -3 C		
	8021B/5030 BTEX					
	Anions					
	Cations					
	Total Dissolved Solids (TDS)					

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DALE LITTLEJOHN
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Order#: G0205254
Project: F-108
Project Name: DEFS: C-1-Line
Location: U-Bar Ranch

Lab ID: 0205254-01
Sample ID: Windmill

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004088-02		12/15/02 17:05	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	83%	80	120
Bromofluorobenzene	91%	80	120

Lab ID: 0205254-02
Sample ID: MW-1

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004088-02		12/17/02 0:27	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.003	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	103%	80	120
Bromofluorobenzene	105%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DALE LITTLEJOHN
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Order#: G0205254
Project: F-108
Project Name: DEFS: C-1-Line
Location: U-Bar Ranch

Lab ID: 0205254-03
Sample ID: MW-2

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004088-02		12/17/02 0:47	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.020	0.001
Toluene	<0.001	0.001
Ethylbenzene	0.002	0.001
p/m-Xylene	0.002	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	103%	80	120
Bromofluorobenzene	103%	80	120

Lab ID: 0205254-04
Sample ID: MW-3

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004088-02		12/15/02 18:21	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	89%	80	120
Bromofluorobenzene	97%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DALE LITTLEJOHN
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Order#: G0205254
Project: F-108
Project Name: DEFS: C-1-Line
Location: U-Bar Ranch

Approval: Raland K Tuttle 12-20-02
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DALE LITTLEJOHN
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Order#: G0205254
Project: F-108
Project Name: DEFS: C-1-Line
Location: U-Bar Ranch

Lab ID: 0205254-01
Sample ID: Windmill

Cations

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Calcium	83.6	mg/L	100	1.0	6010B	12/19/2002	12/19/02	SM
Magnesium	18.2	mg/L	10	0.010	6010B	12/19/2002	12/19/02	SM
Potassium	8.78	mg/L	1	0.050	6010B	12/19/2002	12/19/02	SM
Sodium	52.1	mg/L	10	0.10	6010B	12/19/2002	12/19/02	SM

Lab ID: 0205254-02
Sample ID: MW-1

Cations

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Calcium	61.5	mg/L	10	0.10	6010B	12/19/2002	12/19/02	SM
Magnesium	8.00	mg/L	1	0.001	6010B	12/19/2002	12/19/02	SM
Potassium	4.86	mg/L	1	0.050	6010B	12/19/2002	12/19/02	SM
Sodium	42.6	mg/L	10	0.10	6010B	12/19/2002	12/19/02	SM

Lab ID: 0205254-03
Sample ID: MW-2

Cations

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Calcium	72.0	mg/L	10	0.10	6010B	12/19/2002	12/19/02	SM
Magnesium	9.98	mg/L	1	0.001	6010B	12/19/2002	12/19/02	SM
Potassium	4.66	mg/L	1	0.050	6010B	12/19/2002	12/19/02	SM
Sodium	72.9	mg/L	10	0.10	6010B	12/19/2002	12/19/02	SM

Lab ID: 0205254-04
Sample ID: MW-3

Cations

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Calcium	45.6	mg/L	10	0.10	6010B	12/19/2002	12/19/02	SM
Magnesium	7.61	mg/L	1	0.001	6010B	12/19/2002	12/19/02	SM
Potassium	3.39	mg/L	1	0.050	6010B	12/19/2002	12/19/02	SM
Sodium	48.0	mg/L	10	0.10	6010B	12/19/2002	12/19/02	SM

N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DALE LITTLEJOHN	Order#:	G0205254
TRIDENT ENVIRONMENTAL	Project:	F-108
P.O. BOX 7624	Project Name:	DEFS: C-1-Line
MIDLAND, TX 79708	Location:	U-Bar Ranch

Approval: Raland K Tuttle 12-20-02

Raland K. Tuttle, Lab Director, QA Officer — Date

Celey D. Keene, Org. Tech. Director

Jeanne McMurrey, Inorg. Tech. Director

Sandra Biezugbe, Lab Tech.

Sara Molina, Lab Tech.

N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DALE LITTLEJOHN
TRIDENT ENVIRONMENTAL
P.O. BOX 7624
MIDLAND, TX 79708

Order#: G0205254
Project: F-108
Project Name: DEFS: C-1-Line
Location: U-Bar Ranch

Lab ID: 0205254-01
Sample ID: Windmill

Anions

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Bicarbonate Alkalinity	206	mg/L	1	2.00	310.1	12/13/02	SB
Carbonate Alkalinity	<0.10	mg/L	1	0.10	310.1	12/13/02	SB
Chloride	48.7	mg/L	1	5.00	9253	12/14/02	SB
Hydroxide Alkalinity	<0.10	mg/L	1	0.10	310.1	12/13/02	SB
SULFATE, 375.4	104	mg/L	2	1.0	375.4	12/15/02	SB

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Total Dissolved Solids (TDS)	658	mg/L	1	5.0	160.1	12/15/02	SB

Lab ID: 0205254-02
Sample ID: MW-1

Anions

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Bicarbonate Alkalinity	166	mg/L	1	2.00	310.1	12/13/02	SB
Carbonate Alkalinity	<0.10	mg/L	1	0.10	310.1	12/13/02	SB
Chloride	33.7	mg/L	1	5.00	9253	12/14/02	SB
Hydroxide Alkalinity	<0.10	mg/L	1	0.10	310.1	12/13/02	SB
SULFATE, 375.4	87.0	mg/L	2	1.0	375.4	12/15/02	SB

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Total Dissolved Solids (TDS)	351	mg/L	1	5.0	160.1	12/15/02	SB

Lab ID: 0205254-03
Sample ID: MW-2

Anions

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Bicarbonate Alkalinity	168	mg/L	1	2.00	310.1	12/13/02	SB
Carbonate Alkalinity	<0.10	mg/L	1	0.10	310.1	12/13/02	SB
Chloride	48.7	mg/L	1	5.00	9253	12/14/02	SB
Hydroxide Alkalinity	<0.10	mg/L	1	0.10	310.1	12/13/02	SB
SULFATE, 375.4	167	mg/L	2.5	1.25	375.4	12/15/02	SB

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Total Dissolved Solids (TDS)	535	mg/L	1	5.0	160.1	12/15/02	SB

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DALE LITTLEJOHN		Order#:	G0205254
TRIDENT ENVIRONMENTAL		Project:	F-108
P.O. BOX 7624		Project Name:	DEFS: C-1-Line
MIDLAND, TX 79708		Location:	U-Bar Ranch

Lab ID: 0205254-04
Sample ID: MW-3

Anions

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Bicarbonate Alkalinity	162	mg/L	1	2.00	310.1	12/13/02	SB
Carbonate Alkalinity	<0.10	mg/L	1	0.10	310.1	12/13/02	SB
Chloride	19.5	mg/L	1	5.00	9253	12/14/02	SB
Hydroxide Alkalinity	<0.10	mg/L	1	0.10	310.1	12/13/02	SB
SULFATE, 375.4	67.6	mg/L	2	1.0	375.4	12/15/02	SB

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Total Dissolved Solids (TDS)	339	mg/L	1	5.0	160.1	12/15/02	SB

Approval: Raland K Tuttle 12-20-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0205254

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004088-02			<0.001		
Toluene-mg/L	0004088-02			<0.001		
Ethylbenzene-mg/L	0004088-02			<0.001		
p/m-Xylene-mg/L	0004088-02			<0.001		
o-Xylene-mg/L	0004088-02			<0.001		
CONTROL WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004088-03		0.1	0.107	107.%	
Toluene-mg/L	0004088-03		0.1	0.109	109.%	
Ethylbenzene-mg/L	0004088-03		0.1	0.106	106.%	
p/m-Xylene-mg/L	0004088-03		0.2	0.224	112.%	
o-Xylene-mg/L	0004088-03		0.1	0.110	110.%	
CONTROL DUP WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004088-04		0.1	0.110	110.%	2.8%
Toluene-mg/L	0004088-04		0.1	0.112	112.%	2.7%
Ethylbenzene-mg/L	0004088-04		0.1	0.110	110.%	3.7%
p/m-Xylene-mg/L	0004088-04		0.2	0.230	115.%	2.6%
o-Xylene-mg/L	0004088-04		0.1	0.113	113.%	2.7%
SRM WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004088-05		0.1	0.104	104.%	
Toluene-mg/L	0004088-05		0.1	0.106	106.%	
Ethylbenzene-mg/L	0004088-05		0.1	0.103	103.%	
p/m-Xylene-mg/L	0004088-05		0.2	0.218	109.%	
o-Xylene-mg/L	0004088-05		0.1	0.108	108.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Anions

Order#: G0205254

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Bicarbonate Alkalinity-mg/L	0004068-01			<2.00		
Carbonate Alkalinity-mg/L	0004070-01			<0.10		
Chloride-mg/L	0004067-01			<5.0		
Hydroxide Alkalinity-mg/L	0004072-01			<0.10		
SULFATE, 375.4-mg/L	0004076-01			<0.50		
DUPLICATE WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Bicarbonate Alkalinity-mg/L	0205254-01	206		205		0.5%
Carbonate Alkalinity-mg/L	0205254-01	0		<0.10		0.%
Hydroxide Alkalinity-mg/L	0205254-01	0		<0.10		0.%
SULFATE, 375.4-mg/L	0205254-01	104		103		1.%
MS WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/L	0205235-01	88.6	250	337	99.4%	
MSD WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/L	0205235-01	88.6	250	341	101.%	1.2%
SRM WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Bicarbonate Alkalinity-mg/L	0004068-04		0.05	0.0496	99.2%	
Carbonate Alkalinity-mg/L	0004070-04		0.05	0.0496	99.2%	
Chloride-mg/L	0004067-04		5000	4960	99.2%	
Hydroxide Alkalinity-mg/L	0004072-04		0.05	0.0496	99.2%	
SULFATE, 375.4-mg/L	0004076-04		50	51.0	102.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Cations

Order#: G0205254

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Calcium-mg/L	0004113-02			<0.010		
Magnesium-mg/L	0004113-02			<0.001		
Potassium-mg/L	0004113-02			*<0.050*		
Sodium-mg/L	0004113-02			<0.010		
DUPLICATE WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Calcium-mg/L	0205254-01	83.6		85.4		2.1%
Magnesium-mg/L	0205254-01	18.2		17.8		2.2%
Potassium-mg/L	0205254-01	8.78		8.71		0.8%
Sodium-mg/L	0205254-01	52.1		51.5		1.2%
SRM WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Calcium-mg/L	0004113-05		2	2.02	101.%	
Magnesium-mg/L	0004113-05		2	2.19	109.5%	
Potassium-mg/L	0004113-05		2	1.90	95.%	
Sodium-mg/L	0004113-05		2	1.95	97.5%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0205254

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Total Dissolved Solids (TDS)-mg/L	0004094-01			<5.0		
DUPLICATE WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Total Dissolved Solids (TDS)-mg/L	0205249-01	649		640		1.4%

TRIDENT ENVIRONMENTAL

Trident Environmental
P.O. Box 7624
Midland, Texas 79708
(915) 682-0008
(915) 262-5216 (Fax)

Original Results to: Steave Weathers (DEFS)
Fax Copies to: Mike Stewart (Remediacon)
John Fergerson (Trident)

F-105-12/02

Chain of Custody

Date 12/13/02 Page 1 of 1

Lab Name: Environmental Labs (of Texas)
Address: 12600 West I-20 East
Odessa, TX 79763
Telephone: (505) 563-1800 Fax: (915) 563-1713

Samplers (SIGNATURES): Dale T Littlejohn

Sample Identification	Matrix	Date	Time	Sample Type: G - Grab, C- Composite	BTEX (EPA 8021B)	MTBE (EPA 8021B)	SVOC (EPA 8270)	PAH (EPA 8270)	VOC (EPA 8260)	TPH (EPA 418.1)	TPH (TX-1005)	TPH (TX-1006)	GRO (EPA 8015G)	DRO (EPA 8015D)	TDS (EPA 160.1)	Ca, Mg, Na, K, HCO3, Cl, SO4, & TDS	Tot.Metal (FE, Ba, Mn)	TCLP Metals	Number of Containers
54 -01 Windmill	water	12/12/02	1415	G	✓											✓			3
-02 MW-1	"	12/13/02	0835	G	✓											✓			3
-03 MW-2	"	"	0935	G	✓											✓			3
-04 MW-3	"	"	1035	G	✓											✓			3
				W															
4/1L HCL				A															
8/40mL VOAS				T															
-3C				E															
				R															

Project Information		Sample Receipt	
Project Name:	DEFS: C-1-Line	Total Containers:	
Project Location:	U-Bar Ranch	COC Seals:	
Project Manager:	John Fergerson	Rec'd Good Cond/Cold:	
Cost Center No.:	F-108	Conforms to Records:	
Shipping ID No.:		Lab No.:	
Bill to (see below):			

Special Instructions/Comments: Please send invoice direct to client:
Duke Energy Field Services, Attention: Steave Weathers
P. O. Box 5493, Denver, Colorado 80217

Relinquished By: (1) (Company)	Relinquished By: (2) (Company)	Relinquished By: (3) (Company)
Trident Environmental		
(Printed Name) Dale T. Littlejohn	(Printed Name)	(Printed Name)
(Signature) Dale T Littlejohn	(Signature)	(Signature)
(Date) 12/13/02 (Time) 1505	(Date) (Time)	(Date) (Time)
Received By: (1) (Company) ENVIRONMENTAL LAB	**Received By: (2) (Company)**	**Received By: (3) (Company)**
(Printed Name) DAVID CAUDILL	(Printed Name)	(Printed Name)
(Signature)	(Signature)	(Signature)
(Date) 12/13/02 (Time) 1505	(Date) (Time)	(Date) (Time)

Copy signed original form for Trident Environmental records

ANALYTICAL REPORT

Prepared for:

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Project:	DEFS: C-1-Line
PO#:	F-108
Order#:	G0305438
Report Date:	01/13/2003

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708
262-5216

Order#: G0305438
Project: F-108
Project Name: DEFS: C-1-Line
Location: U-Bar Ranch

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0305438-01	MW-3	WATER	1/10/03 10:25	1/10/03 16:50	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 1.0 C		
0305438-02	MW-2	WATER	1/10/03 11:30	1/10/03 16:50	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 1.0 C		
0305438-03	MW-1	WATER	1/10/03 12:50	1/10/03 16:50	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 1.0 C		
0305438-04	Trip Blank	WATER	1/10/03	1/10/03 16:50	40 ml glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 1.0 C		

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0305438
Project: F-108
Project Name: DEFS: C-1-Line
Location: U-Bar Ranch

Lab ID: 0305438-01
Sample ID: MW-3

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004331-02		1/13/03 13:57	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	115%	80	120
Bromofluorobenzene	100%	80	120

Lab ID: 0305438-02
Sample ID: MW-2

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004331-02		1/13/03 14:18	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.001	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	108%	80	120
Bromofluorobenzene	102%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0305438
Project: F-108
Project Name: DEFS: C-I-Line
Location: U-Bar Ranch

Lab ID: 0305438-03
Sample ID: MW-1

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004331-02		1/13/03 14:39	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.041	0.001
Toluene	0.004	0.001
Ethylbenzene	0.006	0.001
p/m-Xylene	0.003	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	117%	80	120
Bromofluorobenzene	103%	80	120

Lab ID: 0305438-04
Sample ID: Trip Blank

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004331-02		1/13/03 15:00	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	104%	80	120
Bromofluorobenzene	101%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON	Order#:	G0305438
TRIDENT ENVIRONMENTAL	Project:	F-108
P.O BOX 7624	Project Name:	DEFS: C-1-Line
MIDLAND, TX 79708	Location:	U-Bar Ranch

Approval: Raland K Tuttle 1-13-03

Raland K. Tuttle, Lab Director, QA Officer — Date

Celey D. Keene, Org. Tech. Director

Jeanne McMurrey, Inorg. Tech. Director

Sandra Biezugbe, Lab Tech.

Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0305438

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004331-02			<0.001		
Toluene-mg/L	0004331-02			<0.001		
Ethylbenzene-mg/L	0004331-02			<0.001		
p/m-Xylene-mg/L	0004331-02			<0.001		
o-Xylene-mg/L	0004331-02			<0.001		
MS WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/L	0305438-04	0	0.1	0.100	100.%	
Toluene-mg/L	0305438-04	0	0.1	0.102	102.%	
Ethylbenzene-mg/L	0305438-04	0	0.1	0.102	102.%	
p/m-Xylene-mg/L	0305438-04	0	0.2	0.217	108.5%	
o-Xylene-mg/L	0305438-04	0	0.1	0.105	105.%	
MSD WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/L	0305438-04	0	0.1	0.107	107.%	6.8%
Toluene-mg/L	0305438-04	0	0.1	0.109	109.%	6.6%
Ethylbenzene-mg/L	0305438-04	0	0.1	0.109	109.%	6.6%
p/m-Xylene-mg/L	0305438-04	0	0.2	0.231	115.5%	6.3%
o-Xylene-mg/L	0305438-04	0	0.1	0.112	112.%	6.5%
SRM WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/L	0004331-05		0.1	0.098	98.%	
Toluene-mg/L	0004331-05		0.1	0.101	101.%	
Ethylbenzene-mg/L	0004331-05		0.1	0.100	100.%	
p/m-Xylene-mg/L	0004331-05		0.2	0.213	106.5%	
o-Xylene-mg/L	0004331-05		0.1	0.102	102.%	

TRIDENT ENVIRONMENTAL

Trident Environmental
P.O. Box 7624
Midland, Texas 79708
(915) 682-0008
(915) 262-5216 (Fax)

RUSH Results

Original Results to: Steave Weathers (DEFS)
Fax Copies to: Mike Stewart (Remediacon)
and John Fergerson (Trident)

F-108-1/03

Chain of Custody

Date 1/10/03 Page 1 of 1

Lab Name: Environmental Labs of TX
Address: 12600 West I-20 East
Odessa, TX
Telephone: (505) 563-1800 Fax: (915) 563-1713

Samplers (SIGNATURES) Dale T Littlejohn

030543B

	Sample Identification	Matrix	Date	Time	Sample Type: G - Grab, C- Composite	BTEX (EPA 8021B)	MTBE (EPA 8021B)	SVOC (EPA 8270)	PAH (EPA 8270)	VOC (EPA 8260)	TPH (EPA 418.1)	TPH (TX-1005)	TPH (TX-1006)	GRO (EPA 8015G)	DRO (EPA 8015D)	TDS (EPA 160.1)	Ca, Mg, Na, K, HCO3, Cl, SO4, & TDS	Tot Metal (FE, Ba, Mn)	TCLP Metals							Number of Containers
01	MW-3	Water	1/10/03	1025	G	✓																				2
02	MW-2	"	"	1130	G	✓																				2
03	MW-1	"	"	1250	G	✓																				2
04	Trip Blank	"	"	—	-	✓																				2

Project Information		Sample Receipt	
Project Name:	DEFS: C-1-Line	Total Containers:	
Project Location:	U-Bar Ranch	COC Seals:	
Project Manager:	John Fergerson	Rec'd Good Cond/Cold:	
Cost Center No.:	F-108	Conforms to Records:	
Shipping ID No.:		Lab No.:	
Bill to (see below):			

Special Instructions/Comments: Please send invoice direct to client:
Duke Energy Field Services, Attention: Steve Weathers
P. O. Box 5493, Denver, Colorado 80217

Relinquished By: (1) (Company)	Relinquished By: (2) (Company)	Relinquished By: (3) (Company)
Trident Environmental		
(Printed Name) Dale T. Littlejohn	(Printed Name)	(Printed Name)
(Signature) Dale T Littlejohn	(Signature)	(Signature)
(Date) 1/10/03 (Time)	(Date) (Time)	(Date) (Time)
Received By: (1) (Company)	**Received By: (2) (Company)**	**Received By: (3) (Company)**
ENV. LAB OF TX		
(Printed Name) ROY WORTHY	(Printed Name)	(Printed Name)
(Signature) Roy Worthy	(Signature)	(Signature)
(Date) 1-10-03 (Time) 16:50	(Date) (Time)	(Date) (Time)

Copy signed original form for Trident Environmental records

Need by Monday Late
FAX to Steave Weathers

PC
to me VOA

Analytical and Quality Control Report

Dale Littlejohn
Trident Environmental
P.O. Box 7624
Midland, Tx. 79708

Report Date: January 14, 2003

Order ID Number: A03011316

Project Number: DEFS-C-1 Line
Project Name: N/A
Project Location: U-Bar Ranch

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
218384	MW-3	Water	1/10/03	10:25	1/11/03
218385	MW-2	Water	1/10/03	11:30	1/11/03
218386	MW-1	Water	1/10/03	12:50	1/11/03
218387	Trip Blank	Water	1/10/03	:	1/11/03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 218384 - MW-3

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC26180	Date Analyzed:	1/13/03
Analyst:	CG	Preparation Method:	S 5030B	Prep Batch:	PB24203	Date Prepared:	1/13/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.005	mg/L	5	0.001
Toluene		<0.005	mg/L	5	0.001
Ethylbenzene		<0.005	mg/L	5	0.001
M,P,O-Xylene		<0.005	mg/L	5	0.001
Total BTEX		<0.005	mg/L	5	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.090	mg/L	5	0.10	90	70 - 130
4-BFB		0.093	mg/L	5	0.10	93	70 - 130

Sample: 218385 - MW-2

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC26180	Date Analyzed:	1/13/03
Analyst:	CG	Preparation Method:	S 5030B	Prep Batch:	PB24203	Date Prepared:	1/13/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.001	mg/L	1	0.001
Toluene		<0.001	mg/L	1	0.001
Ethylbenzene		<0.001	mg/L	1	0.001
M,P,O-Xylene		<0.001	mg/L	1	0.001
Total BTEX		<0.001	mg/L	1	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0948	mg/L	1	0.10	95	70 - 130
4-BFB		0.0726	mg/L	1	0.10	73	70 - 130

Sample: 218386 - MW-1

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC26180	Date Analyzed:	1/13/03
Analyst:	CG	Preparation Method:	S 5030B	Prep Batch:	PB24203	Date Prepared:	1/13/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		0.0497	mg/L	1	0.001
Toluene		0.0043	mg/L	1	0.001
Ethylbenzene		0.005	mg/L	1	0.001
M,P,O-Xylene		0.0034	mg/L	1	0.001
Total BTEX		0.0624	mg/L	1	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.096	mg/L	1	0.10	96	70 - 130
4-BFB		0.0778	mg/L	1	0.10	78	70 - 130

Sample: 218387 - Trip Blank

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC26179	Date Analyzed:	1/13/03
Analyst:	CG	Preparation Method:	S 5030B	Prep Batch:	PB24202	Date Prepared:	1/13/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.001	mg/L	1	0.001
Toluene		<0.001	mg/L	1	0.001
Ethylbenzene		<0.001	mg/L	1	0.001
M,P,O-Xylene		<0.001	mg/L	1	0.001
Total BTEX		<0.001	mg/L	1	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0969	mg/L	1	0.10	97	70 - 130
4-BFB		0.0826	mg/L	1	0.10	83	70 - 130

Quality Control Report
Method Blank

Method Blank

QCBatch: QC26179

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.001	mg/L	0.001
Toluene		<0.001	mg/L	0.001
Ethylbenzene		<0.001	mg/L	0.001
M,P,O-Xylene		<0.001	mg/L	0.001
Total BTEX		<0.001	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.095	mg/L	1	0.10	95	70 - 130
4-BFB		0.076	mg/L	1	0.10	76	70 - 130

Method Blank

QCBatch: QC26180

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.001	mg/L	0.001
Toluene		<0.001	mg/L	0.001
Ethylbenzene		<0.001	mg/L	0.001
M,P,O-Xylene		<0.001	mg/L	0.001
Total BTEX		<0.001	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0904	mg/L	1	0.10	90	70 - 130
4-BFB	[1]	0.068	mg/L	1	0.10	68	70 - 130

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC26179

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.0971	0.0972	mg/L	1	0.10	<0.001	97	0	70 - 130	20
Benzene	0.0936	0.094	mg/L	1	0.10	<0.001	94	0	70 - 130	20
Toluene	0.0939	0.0942	mg/L	1	0.10	<0.001	94	0	70 - 130	20
Ethylbenzene	0.0943	0.0949	mg/L	1	0.10	<0.001	94	1	70 - 130	20
M,P,O-Xylene	0.282	0.284	mg/L	1	0.30	<0.001	94	1	70 - 130	20

[1]Low surrogate recovery due to prep. ICV, CCV show the method to be in control.

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.092	0.0953	mg/L	1	0.10	92	95	70 - 130
4-BFB	0.0964	0.0986	mg/L	1	0.10	96	99	70 - 130

Laboratory Control Spikes

QCBatch: QC26180

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.0948	0.0972	mg/L	1	0.10	<0.001	95	2	70 - 130	20
Benzene	0.091	0.0936	mg/L	1	0.10	<0.001	91	3	70 - 130	20
Toluene	0.0916	0.0942	mg/L	1	0.10	<0.001	92	3	70 - 130	20
Ethylbenzene	0.0912	0.0932	mg/L	1	0.10	<0.001	91	2	70 - 130	20
M,P,O-Xylene	0.272	0.278	mg/L	1	0.30	<0.001	91	2	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.0877	0.0899	mg/L	1	0.10	88	90	70 - 130
4-BFB	0.0907	0.0926	mg/L	1	0.10	91	93	70 - 130

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC26179

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.103	103	85 - 115	1/13/03
Benzene		mg/L	0.10	0.0926	93	85 - 115	1/13/03
Toluene		mg/L	0.10	0.0942	94	85 - 115	1/13/03
Ethylbenzene		mg/L	0.10	0.0937	94	85 - 115	1/13/03
M,P,O-Xylene		mg/L	0.30	0.281	94	85 - 115	1/13/03

CCV (2)

QCBatch: QC26179

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.099	99	85 - 115	1/13/03
Benzene		mg/L	0.10	0.095	95	85 - 115	1/13/03
Toluene		mg/L	0.10	0.096	96	85 - 115	1/13/03
Ethylbenzene		mg/L	0.10	0.095	95	85 - 115	1/13/03

Continued ...

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
M,P,O-Xylene		mg/L	0.30	0.283	94	85 - 115	1/13/03

ICV (1) QCBatch: QC26179

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE	[2]	mg/L	0.10	0.080	80	85 - 115	1/13/03
Benzene		mg/L	0.10	0.099	99	85 - 115	1/13/03
Toluene		mg/L	0.10	0.1	100	85 - 115	1/13/03
Ethylbenzene		mg/L	0.10	0.099	99	85 - 115	1/13/03
M,P,O-Xylene		mg/L	0.30	0.298	99	85 - 115	1/13/03

CCV (1) QCBatch: QC26180

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0973	97	85 - 115	1/13/03
Benzene		mg/L	0.10	0.0938	94	85 - 115	1/13/03
Toluene		mg/L	0.10	0.0939	94	85 - 115	1/13/03
Ethylbenzene		mg/L	0.10	0.0929	93	85 - 115	1/13/03
M,P,O-Xylene		mg/L	0.30	0.277	92	85 - 115	1/13/03

ICV (1) QCBatch: QC26180

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0973	97	85 - 115	1/13/03
Benzene		mg/L	0.10	0.0931	93	85 - 115	1/13/03
Toluene		mg/L	0.10	0.0936	94	85 - 115	1/13/03
Ethylbenzene		mg/L	0.10	0.0928	93	85 - 115	1/13/03
M,P,O-Xylene		mg/L	0.30	0.278	93	85 - 115	1/13/03

[2]MTBE outside normal limits. Average of ICV components within acceptable range.

ANALYTICAL REPORT

Prepared for:

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Project:	DEFS: C-1 Line
PO#:	F-108
Order#:	G0305528
Report Date:	01/24/2003

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708
262-5216

Order#: G0305528
Project: F-108
Project Name: DEFS: C-1 Line
Location: U-Bar Ranch

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0305528-01	MW-3	WATER	1/23/03 9:00	1/23/03 15:02	40 mL glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 2.5 C		
0305528-02	MW-2	WATER	1/23/03 10:00	1/23/03 15:02	40 mL glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 2.5 C		
0305528-03	MW-1	WATER	1/23/03 10:55	1/23/03 15:02	40 mL glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 2.5 C		
0305528-04	Trip Blank	WATER	1/23/03	1/23/03 15:02	40 mL glass	Ice, HCl
	Lab Testing: 8021B/5030 BTEX	Rejected: No		Temp: 2.5 C		

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0305528
Project: F-108
Project Name: DEFS: C-1 Line
Location: U-Bar Ranch

Lab ID: 0305528-01
Sample ID: MW-3

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004437-02		1/23/03 18:44	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	102%	80	120
Bromofluorobenzene	101%	80	120

Lab ID: 0305528-02
Sample ID: MW-2

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004437-02		1/24/03 10:45	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.001	0.001
Toluene	0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	100%	80	120
Bromofluorobenzene	95%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: C0305528
Project: F-108
Project Name: DEFS: C-1 Line
Location: U-Bar Ranch

Lab ID: 0305528-03
Sample ID: MW-1

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004437-02		1/23/03 19:28	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	0.033	0.001
Toluene	0.004	0.001
Ethylbenzene	0.006	0.001
p/m-Xylene	0.004	0.001
o-Xylene	0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	116%	80	120
Bromofluorobenzene	101%	80	120

Lab ID: 0305528-04
Sample ID: Trip Blank

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004437-02		1/24/03 11:07	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	<0.001	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	102%	80	120
Bromofluorobenzene	95%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON	Order#:	G0305528
TRIDENT ENVIRONMENTAL	Project:	F-108
P.O BOX 7624	Project Name:	DEFS: C-1 Line
MIDLAND, TX 79708	Location:	U-Bar Ranch

Approval: Raland K. Tuttle 1-24-03
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0305528

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004437-02			<0.001		
Toluene-mg/L	0004437-02			<0.001		
Ethylbenzene-mg/L	0004437-02			<0.001		
p/m-Xylene-mg/L	0004437-02			<0.001		
o-Xylene-mg/L	0004437-02			<0.001		
CONTROL WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004437-03		0.1	0.094	94.%	
Toluene-mg/L	0004437-03		0.1	0.097	97.%	
Ethylbenzene-mg/L	0004437-03		0.1	0.098	98.%	
p/m-Xylene-mg/L	0004437-03		0.2	0.204	102.%	
o-Xylene-mg/L	0004437-03		0.1	0.094	94.%	
CONTROL DUP WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004437-04		0.1	0.098	98.%	4.2%
Toluene-mg/L	0004437-04		0.1	0.099	99.%	2.%
Ethylbenzene-mg/L	0004437-04		0.1	0.099	99.%	1.%
p/m-Xylene-mg/L	0004437-04		0.2	0.209	104.5%	2.4%
o-Xylene-mg/L	0004437-04		0.1	0.095	95.%	1.1%
SRM WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/L	0004437-05		0.1	0.096	96.%	
Toluene-mg/L	0004437-05		0.1	0.101	101.%	
Ethylbenzene-mg/L	0004437-05		0.1	0.102	102.%	
p/m-Xylene-mg/L	0004437-05		0.2	0.218	109.%	
o-Xylene-mg/L	0004437-05		0.1	0.096	96.%	

TRIDENT ENVIRONMENTAL

Trident Environmental
P.O. Box 7624
Midland, Texas 79708
(915) 682-0008
(915) 262-5216 (Fax)

RUSH Results

Original Results to: Steave Weathers (DEFS)
Fax Copies to: Mike Stewart (Remediacon)
and John Fergerson (Trident)

F-108-1/03(2)

Chain of Custody

Date 1/23/03 Page 1 of 1

Lab Name: Environmental Labs of TX
Address: 12600 West I-20 East
Odessa, TX
Telephone: (505) 563-1800 Fax: (915) 563-1713

Samplers (SIGNATURES) Dale T Littlejohn

	Sample Identification	Matrix	Date	Time	Sample Type: G - Grab, C- Composite	BTEX (EPA 8021B)	MTBE (EPA 8021B)	SVOC (EPA 8270)	PAH (EPA 8270)	VOC (EPA 8260)	TPH (EPA 418.1)	TPH (TX-1005)	TPH (TX-1006)	GRO (EPA 8015G)	DRO (EPA 8015D)	TDS (EPA 160.1)	Ca, Mg, Na, K, HCO3, Cl, SO4, & TDS	Tot.Metal (FE, Ba, Mn)	TCLP Metals						Number of Containers
-01	MW-3	Water	1/23/03	0900	G	✓																			2
-02	MW-2	"	"	1000	G	✓																			2
-03	MW-1	"	"	1055	G	✓																			2
-04	Trip Blank.	water	—	—		✓																			

Project Information		Sample Receipt	
Project Name:	DEFS: C-1-Line	Total Containers:	
Project Location:	U-Bar Ranch	COC Seals:	
Project Manager:	John Fergerson	Rec'd Good Cond/Cold:	
Cost Center No.:	F-108	Conforms to Records:	
Shipping ID No.:	Hand Delivered	Lab No.:	
Bill to (see below):			

Special Instructions/Comments: Please send invoice direct to client:
Duke Energy Field Services, Attention: Steve Weathers
P. O. Box 5493, Denver, Colorado 80217

Relinquished By: (1) (Company)	Relinquished By: (2) (Company)	Relinquished By: (3) (Company)
Trident Environmental		
(Printed Name) Dale T. Littlejohn	(Printed Name)	(Printed Name)
(Signature) Dale T Littlejohn	(Signature)	(Signature)
(Date) 1/23/03 (Time) 1502	(Date) (Time)	(Date) (Time)
Received By: (1) (Company) Env. Lab of Texas	**Received By: (2) (Company)**	**Received By: (3) (Company)**
(Printed Name) Roland K Tuttle	(Printed Name)	(Printed Name)
(Signature)	(Signature)	(Signature)
(Date) 1-23-03 (Time) 1502	(Date) (Time)	(Date) (Time)

Copy signed original form for Trident Environmental records

ANALYTICAL REPORT

Prepared for:

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Project:	DEFS (C-1 Line)
PO#:	
Order#:	G0205207
Report Date:	12/17/2002

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708
262-5216

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0205207-01	0212060830 (MW-1/10'-12')	SOIL	12/6/02 8:30	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing: 8015M, 8021B/5030 BTEX, Chloride, Sulfate	Rejected: No		Temp: -2 C		
0205207-02	0212060844 (MW-1/20'-22')	SOIL	12/6/02 8:44	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing: 8015M, 8021B/5030 BTEX, Chloride, Sulfate	Rejected: No		Temp: -2 C		
0205207-03	0212060857 (MW-1/30'32')	SOIL	12/6/02 8:57	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing: 8015M, 8021B/5030 BTEX, Chloride, Sulfate	Rejected: No		Temp: -2 C		
0205207-04	0212060910 (MW-1/40'-42')	SOIL	12/6/02 9:10	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing: 8015M, 8021B/5030 BTEX, Chloride, Sulfate	Rejected: No		Temp: -2 C		
0205207-05	0212061025 (MW-3/10'-12')	SOIL	12/6/02 10:25	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing: 8015M, 8021B/5030 BTEX, Chloride	Rejected: No		Temp: -2 C		

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708
262-5216

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
	Sulfate					
0205207-06	0212061045 (MW-3/20'-22')	SOIL	12/6/02 10:45	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing:	Rejected: No		Temp: -2 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					
	Sulfate					
0205207-07	0212061107 (MW-3/30'-32')	SOIL	12/6/02 11:07	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing:	Rejected: No		Temp: -2 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					
	Sulfate					
0205207-08	0212061332 (MW-2/20'-22')	SOIL	12/6/02 13:32	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing:	Rejected: No		Temp: -2 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					
	Sulfate					
0205207-09	0212061348 (MW-2/30'-32')	SOIL	12/6/02 13:48	12/10/02 14:10	4 oz Glass	Ice
	Lab Testing:	Rejected: No		Temp: -2 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					
	Sulfate					

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-01
Sample ID: 0212060830 (MW-1/10'-12')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	89%	70	130
1-Chlorooctadecane	96%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 10:43	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	118%	80	120
Bromofluorobenzene	119%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G020S207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-02
Sample ID: 0212060844 (MW-1/20'-22')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	85%	70	130
1-Chlorooctadecane	94%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 11:03	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	119%	80	120
Bromofluorobenzene	119%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON		Order#:	G0205207
TRIDENT ENVIRONMENTAL		Project:	F-108
P.O BOX 7624		Project Name:	DEFS (C-1 Line)
MIDLAND, TX 79708		Location:	U-Bar Ranch

Lab ID: 0205207-03
Sample ID: 0212060857 (MW-1/30'32')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	87%	70	130
1-Chlorooctadecane	94%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 11:22	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	0.053	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	120%	80	120
Bromofluorobenzene	119%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-04
Sample ID: 0212060910 (MW-1/40'-42')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	82%	70	130
1-Chlorooctadecane	88%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 11:42	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	0.053	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	120%	80	120
Bromofluorobenzene	120%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-05
Sample ID: 0212061025 (MW-3/10'-12')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	95%	70	130
1-Chlorooctadecane	106%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 12:01	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	118%	80	120
Bromofluorobenzene	120%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-06
Sample ID: 0212061045 (MW-3/20'-22')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	85%	70	130
1-Chlorooctadecane	91%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 12:21	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	0.031	0.025
Toluene	<0.025	0.025
p/m-Xylene	0.069	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	115%	80	120
Bromofluorobenzene	120%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-07
Sample ID: 0212061107 (MW-3/30'-32')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	86%	70	130
1-Chlorooctadecane	92%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 12:40	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	0.028	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	80%	80	120
Bromofluorobenzene	83%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-08
Sample ID: 0212061332 (MW-2/20'-22')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	85%	70	130
1-Chlorooctadecane	91%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 13:00	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	0.074	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	117%	80	120
Bromofluorobenzene	119%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-09
Sample ID: 0212061348 (MW-2/30'-32')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/10/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	81%	70	130
1-Chlorooctadecane	86%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004063-02		12/13/02 14:25	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	119%	80	120
Bromofluorobenzene	120%	80	120

Approval: Raland K Tuttle 12-16-02
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON
TRIDENT ENVIRONMENTAL
P.O BOX 7624
MIDLAND, TX 79708

Order#: G0205207
Project: F-108
Project Name: DEFS (C-1 Line)
Location: U-Bar Ranch

Lab ID: 0205207-01
Sample ID: 0212060830 (MW-1/10'-12')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	73	mg/kg	5	2.5	375.4	12/12/02	SB

Lab ID: 0205207-02
Sample ID: 0212060844 (MW-1/20'-22')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	168	mg/kg	5	2.5	375.4	12/12/02	SB

Lab ID: 0205207-03
Sample ID: 0212060857 (MW-1/30'32')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	56.0	mg/kg	5	2.5	375.4	12/12/02	SB

Lab ID: 0205207-04
Sample ID: 0212060910 (MW-1/40'-42')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	6.50	mg/kg	5	2.5	375.4	12/12/02	SB

Lab ID: 0205207-05
Sample ID: 0212061025 (MW-3/10'-12')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	79.5	mg/kg	5	2.5	375.4	12/12/02	SB

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

JOHN FERGERSON		Order#:	G0205207
TRIDENT ENVIRONMENTAL		Project:	F-108
P.O BOX 7624		Project Name:	DEFS (C-1 Line)
MIDLAND, TX 79708		Location:	U-Bar Ranch

Lab ID: 0205207-06
Sample ID: 0212061045 (MW-3/20'-22')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	3.00	mg/kg	5	2.5	375.4	12/12/02	SB

Lab ID: 0205207-07
Sample ID: 0212061107 (MW-3/30'-32')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	5.00	mg/kg	5	2.5	375.4	12/12/02	SB

Lab ID: 0205207-08
Sample ID: 0212061332 (MW-2/20'-22')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	37.0	mg/kg	5	2.5	375.4	12/12/02	SB

Lab ID: 0205207-09
Sample ID: 0212061348 (MW-2/30'-32')

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20	mg/kg	1	20	9253	12/11/02	SB
Sulfate	65.0	mg/kg	5	2.5	375.4	12/12/02	SB

Approval: Raland K Tuttle 12-17-02
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0205207

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0004032-02			<10.0		
CONTROL SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0004032-03		952	1040	109.2%	
CONTROL DUP SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0004032-04		952	894	93.9%	15.1%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0004032-05		1000	1010	101.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0205207

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0004063-02			<0.025		
Ethylbenzene-mg/kg	0004063-02			<0.025		
Toluene-mg/kg	0004063-02			<0.025		
p/m-Xylene-mg/kg	0004063-02			<0.025		
o-Xylene-mg/kg	0004063-02			<0.025		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0205200-24	0	2.5	2.64	105.6%	
Ethylbenzene-mg/kg	0205200-24	0.306	2.5	3.01	108.2%	
Toluene-mg/kg	0205200-24	0.076	2.5	2.80	109.%	
p/m-Xylene-mg/kg	0205200-24	1.06	5	6.61	111.%	
o-Xylene-mg/kg	0205200-24	0.244	2.5	3.02	111.%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0205200-24	0	2.5	2.46	98.4%	7.1%
Ethylbenzene-mg/kg	0205200-24	0.306	2.5	2.86	102.2%	5.1%
Toluene-mg/kg	0205200-24	0.076	2.5	2.65	103.%	5.5%
p/m-Xylene-mg/kg	0205200-24	1.06	5	6.30	104.8%	4.8%
o-Xylene-mg/kg	0205200-24	0.244	2.5	2.82	103.%	6.8%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0004063-05		0.1	0.108	108.%	
Ethylbenzene-mg/kg	0004063-05		0.1	0.112	112.%	
Toluene-mg/kg	0004063-05		0.1	0.111	111.%	
p/m-Xylene-mg/kg	0004063-05		0.2	0.229	114.5%	
o-Xylene-mg/kg	0004063-05		0.1	0.112	112.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0205207

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0004040-01			<20		
Sulfate-mg/kg	0004052-01			<2.5		
DUPLICATE SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Sulfate-mg/kg	0205207-06	3		3.00		0.%
MS SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0205207-01	0	1000	1010	101.%	
MSD SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0205207-01	0	1000	1010	101.%	0.%
SRM SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0004040-04		5000	4960	99.2%	
Sulfate-mg/kg	0004052-04		50	49.0	98.%	

Environmental Lab of Texas I, Ltd.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: John Fergerson
Company Name: Trident Environmental
Company Address: P.O. Box 7624
City/State/Zip: Midland, Tx 79708
Telephone No: 915-682-0008 Fax No: 915-262-5216
Sampler Signature: John Fergerson

Project Name: DEFS (C-1 Line)
Project #: F-108
Project Loc: U-Bar Ranch
PO #:

0205207 LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP: TPH: 418.1 / 8015M 1005 1006	TOTAL: Cations (Ca, Mg, Na, K)	TOTAL: Anions (Cl, SO_4, ~~TDS~~, ~~Hardness~~)	TOTAL: SAR / ESP / CEC	TOTAL: Metals: As Ag Ba Cd Cr Pb Hg Se	TOTAL: Volatiles	TOTAL: Semivolatiles	TOTAL: BTEX 8021B/5030	TOTAL: RCI	TOTAL: N.O.R.M.	TOTAL: Total Gamma	RUSH TAT (Pre-Schedule)	Standard TAT
01	021206 0830 (MW-1/10'-12')	12/6/02	0830	1	X									X		X		X					X					X
02	021206 0844 (MW-1/20'-22')	12/6/02	0844	1	X									X		X		X					X					X
03	021206 0857 (MW-1/30'-32')	12/6/02	0857	1	X									X		X		X					X					X
04	021206 0910 (MW-1/40'-42')	12/6/02	0910	1	X									X		X		X					X					X
05	021206 1025 (MW-3/10'-12')	12/6/02	1025	1	X									X		X		X					X					X
06	021206 1045 (MW-3/20'-22')	12/6/02	1045	1	X									X		X		X					X					X
07	021206 1107 (MW-3/30'-32')	12/6/02	1107	1	X									X		X		X					X					X
08	021206 1332 (MW-2/20'-22')	12/6/02	1332	1	X									X		X		X					X					X
09	021206 1348 (MW-2/30'-32')	12/6/02	1348	1	X									X		X		X					X					X

Special Instructions: Bill Direct to: Duke Energy Field Services, Attn: Steve Weathers
Original Results to Steve Weathers (Duke Energy), Fax Copies to: John Fergerson (Trident) Mike Stewart (Remediacon)

Sample Containers Intact? Y N
Temperature Upon Receipt: -2C
Laboratory Comments: 40z GLASS

Relinquished by:	Date	Time	Received by:	Date	Time
John Fergerson	12/10/02	1410			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Mayra Caudillo	12/10/02	1420

Jan 30 03 10:04a