

1R - 2136

REPORTS

DATE:

5-18-11



1R-2136

**MOBILE DUAL PHASE EXTRACTION REPORT
DCP PLANT TO LEA STATION 6 INCH #2 PIPELINE RELEASE
MONUMENT, LEA COUNTY, NEW MEXICO
SRS # 2009-039
TALON/LPE PROJECT # 700376.084.01**

AMARILLO
921 North Bivins
Amarillo, Texas 79107
Phone 806.467.0607
Fax 806.467.0622

AUSTIN
3003 Tom Gary Cove
Building C-100
Round Rock, Texas 78664
Phone 512.989.3428
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MIDLAND
2901 State Highway 349
Midland, Texas 79706
Phone 432.522.2133
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SAN ANTONIO
17170 Jordan Road
Suite 102
Selma, Texas 78154
Phone 210.579.0235
Fax 210.568.2191

TULSA
9906 East 43rd Street
Suite G
Tulsa, Oklahoma 74146
Phone 918.742.0871
Fax 918.742.0876

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Hobbs, New Mexico 88241
Phone 505.393.4261
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Suite 255
Tyler, Texas 75702
Phone 903.531.9971
Fax 903.531.9979

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Suite 400
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PREPARED FOR:

**PLAINS MARKETING, L.P.
333 CLAY STREET
SUITE 1600
HOUSTON, TEXAS 77002**

PREPARED BY:

**TALON/LPE
921 N. BIVINS
AMARILLO, TEXAS 79107**

DISTRIBUTION:

**COPY 1 - PLAINS MARKETING, L.P. - MIDLAND
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COPY 4 - BASIN ENVIRONMENTAL
COPY 5 - TALON/LPE**

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JUN 13 2011

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

May 18, 2011



PLAINS
PIPELINE, L.P.

June 10, 2011

Mr. Edward Hansen
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Plains Pipeline, L.P.
Reports for MDPE Events at Four (4) Remediation Sites in Lea County, NM

Dear Mr. Hansen:

Plains Pipeline, L.P. is pleased to submit the attached reports which provide details regarding the Mobile Dual Phase Extraction (MDPE) events that were conducted at the following sites during May 2011:

DCP Plant to Lea Station 6-inch Sec. 31	NMOCD Reference #1R-2166
DCP Plant to Lea Station 6-inch #2	NMOCD Reference #1R-2136
Monument 10	NMOCD Reference #1R-0119
Monument 18	NMOCD Reference #1R-0124

Should you have any questions or comments, please contact me at (575) 441-1099.

Sincerely,

Jason Henry
Remediation Coordinator
Plains Pipeline, L.P.

Enclosure

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2011 JUN 13 P 1:37

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Attachments:

- Attachment 1 - MDPE field logs
- Attachment 2 - Laboratory Analytical Results
- Attachment 3 – Oxidizer Charts

I. MDPE SUMMARY REPORT AND WASTE DISPOSITION

A. MDPE Results

The following report summarizes data collected during the 12-hour High Vacuum Multi-Phase Extraction (MDPE) event conducted from May 5, 2011 to May 6, 2011 at the DCP Plant to Lea Station 6 Inch #2 Pipeline release site, located in Lea County, New Mexico. The objective of the MDPE treatment was to remove both vapor and liquid phase separated hydrocarbons (PSH) from onsite groundwater wells. Talon/LPE utilized an MDPE unit which consisted of an SVE extraction pump capable of generating vacuum up to 25" hg. Off gas vapors extracted from the extraction wells were destroyed using a propane-fired 1000-SCFM thermal oxidizer capable of processing 172.96 lbs/hr of gasoline.

A total of 12 hours (0.5 days) of PSH recovery was performed. MW-1 for 12 hours.

Prior to and immediately following the event, the groundwater wells were gauged for groundwater elevation and PSH. Depth to groundwater ranges were measured in feet below the top of casing. Refer to Attachment 1 for a summary of data collected during the MDPE event.

The volume of PSH removed during the MDPE event is shown to reflect the portions of PSH in the liquid phase and as off-gas vapor. Air removal rates were calculated from velocity measurements recorded at the influent manifold prior to entry into the MDPE unit. PSH recovery and air flow data has been detailed and is contained in Table 1. Three influent air samples were collected over the course of the event. These samples were submitted for laboratory testing in order to compare the predicted vapor concentrations (based on field-screening or calculated based on fuel consumption) to the actual vapor concentrations. All three influent samples were tested for Total-Gas Analysis (Hydrocarbon Composition) by ASTM method D 1945. Laboratory analytical results can be found in Attachment 2.

Based on a combination of field vapor screening and collected laboratory samples, a combined estimated total of **33.83 equivalent gallons of PSH (Total)** were removed during the event. The combined volume of PSH was comprised of approximately **14 gallons of PSH (liquid phase)** and approximately **19.83 gallons as off-gas vapor**.

The cumulative air flow measurements for the MDPE event were calculated using a combination of field data measurements and Preso® B+ manufacturer provided formulas. **Air flow rates extracted from the recovery wells averaged 22.62 SCFM** during the event.

A portion of the extracted air flow rates measured is attributable to compressed air, which was "injected" into the extraction wells. This "injected" air is introduced into the extraction wells for the purpose of enhancing liquid recovery rates.

B. Air Quality

Three influent air samples were collected during the event. These samples were submitted for laboratory testing in order to compare the predicted vapor concentrations (based on field-screening or calculated based on fuel consumption) to the actual vapor concentrations. The maximum concentration in air influent was recorded as 35,477.50 ppmv for Hydrocarbon Composition.

C. Waste Management and Disposition

A cumulative total of 1,677 gallons of fluid were generated during this event. The fluids were transferred to an on-site storage tank.

II. SYSTEM OPERATION DATA AND MASS RECOVERY CALCULATIONS

Formulae:

$$\text{Concentration (C_mg/l)} = \frac{\text{C_ppmv} \times \text{Mol. wt. in mg(estimated)} \times 0.000001}{0.0821 \times \text{Temp (K)}}$$

$$\text{Recovery Rate (lbs/hr)} = \frac{(\text{C_mg/l}) \times 2.2 \times (\text{Flowrate}) \times 60 \times 28.32}{1,000,000}$$

$$\text{Recovery (lbs)} = (\text{lbs/hr}) \times (\text{hrs})$$

$$\text{Correction Factor (CF)} = \frac{\text{FID Reading(ppmv)}}{\text{FID Reading at Time of Laboratory Analysis}}$$

$$\frac{8.34 \text{ lbs}}{\text{gallon water}} \times 0.734 \text{ average specific gravity of light crude (estimated)} = \frac{6.12156 \text{ lbs light crude}}{\text{gallon}}$$

ATTACHMENT 1
MDPE Field Logs

ATTACHMENT 2
Laboratory Analytical Results

806-665-0750
806-665-0753
877-788-0750

Midwest Precision Testing LLC
135 N Price Rd
Pampa, TX 79065

www.mwptlab.com

The following analytical results were produced using the strictest quality control and most current methods:

COC #: N/A

Lab #: 5236-5238

Quality Control #: 1507

Approved by:

Neil Ray

Neil Ray

Date: 5/16/11

806-665-0750
 806-665-0753
 877-788-0750

Midwest Precision Testing LLC
 135 N Price Rd
 Pampa, TX 79065

www.mwptlab.com

Sample Matrix: Gas
 Sample Type: Spot
 Preservative: N/A
 Sample Container: Tedlar Bag

Client: Trace Analysis, Inc.
 Project Location: DCP Plant to Lea Station
 6 inch #2

Method(s): ASTM D 1945
 Gas Analysis by Gas
 Chromatography

Sample Id.: Influent #2
 700376.084.01
 Trace: 266022

Sample Temp.: N/A
 Atmospheric Temp.: N/A
 Pressure: N/A
 Field Data: N/A
 Sample Date: 5/05/11 Time: 6:00 pm
 Sampled By: N/A
 Analysis Date: 5/13/11
 Analysis By: Andrew Dunn

Lab #: 5237
 Quality Control Report: 1507

Analytical Results

Gas Composition	Mol %	GPM	Vol %	Wt. %
Nitrogen (N2):	94.3246	10.3262	85.7321	87.7404
Carbon Dioxide (CO2):	1.9388	0.3271	2.7334	2.8271
Hydrocarbon Composition	Mol %	GPM	Vol. %	Wt. %
Methane (CH4):	0.0969	0.0165	0.1358	0.0515
Ethane (C2H6):	0.0005	0.0001	0.0012	0.0005
Propane (C3H8):	0.0350	0.0096	0.0798	0.0511
Iso-Butane (C4H10):	0.0671	0.0219	0.1815	0.1292
N-Butane (C4H10):	0.3242	0.1017	0.8449	0.6239
Iso-Pentane (C5H12):	0.4702	0.1711	1.4201	1.1217
N-Pentane (C5H12):	0.7536	0.2718	2.2589	1.8025
Hexane+ (C6H14):	1.9890	0.8589	6.6124	5.6519
Totals	100.0000	12.1048	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft ³):	165.3	Z-Comp. Factor-dry:	0.99924
BTU -water vapor sat.(BTU/ft ³):	164.3	Z-Comp. Factor-water vapor sat.:	0.99295
Specific Gravity -dry:	1.0456	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.0448		

806-665-0750
 806-665-0753
 877-788-0750

Midwest Precision Testing LLC
 135 N Price Rd
 Pampa, TX 79065

www.mwptlab.com

Sample Matrix: Gas
 Sample Type: Spot
 Preservative: N/A
 Sample Container: Tedlar Bag

Client: Trace Analysis, Inc.
 Project Location: DCP Plant to Lea Station
 6 inch #2

Method(s): ASTM D 1945
 Gas Analysis by Gas
 Chromatography

Sample Id.: Influent #3
 700376.084.01
 Trace: 266023

Sample Temp.: N/A
 Atmospheric Temp.: N/A
 Pressure: N/A
 Field Data: N/A
 Sample Date: 5/05/11 Time: 11:00 pm
 Sampled By: N/A
 Analysis Date: 5/13/11
 Analysis By: Andrew Dunn

Lab #: 5238
 Quality Control Report: 1507

Analytical Results

<u>Gas Composition</u>	<u>Mol %</u>	<u>GPM</u>	<u>Vol %</u>	<u>Wt. %</u>
Nitrogen (N2):	92.8813	10.1692	83.1410	85.6343
Carbon Dioxide (CO2):	2.4919	0.4204	3.4599	3.6015
<u>Hydrocarbon Composition</u>	<u>Mol %</u>	<u>GPM</u>	<u>Vol. %</u>	<u>Wt. %</u>
Methane (CH4):	0.4726	0.0803	0.6520	0.2489
Ethane (C2H6):	0.0297	0.0079	0.0647	0.0293
Propane (C3H8):	0.0511	0.0140	0.1145	0.0739
Iso-Butane (C4H10):	0.0873	0.0284	0.2324	0.1665
N-Butane (C4H10):	0.4135	0.1297	1.0613	0.7887
Iso-Pentane (C5H12):	0.5357	0.1950	1.5933	1.2666
N-Pentane (C5H12):	0.8156	0.2942	2.4076	1.9335
Hexane+ (C6H14):	2.2215	0.9593	7.2732	6.2567
Totals	100.0000	12.2984	100.0000	100.0000

Comments - Additional Data

BTU -dry (BTU/ft ³):	190.5	Z-Comp. Factor-dry:	0.99915
BTU -water vapor sat.(BTU/ft ³):	189.3	Z-Comp. Factor-water vapor sat.:	0.99253
Specific Gravity -dry:	1.0556	14.65 psi Pressure Base	
Specific Gravity-water vapor sat.:	1.0551		

806-665-0750
 806-665-0753
 877-788-0750

Midwest Precision Testing LLC
 135 N Price Rd
 Pampa, TX 79065

www.mwptlab.com

Sample Type: Standard
 Preservative: N/A
 Sample Container: Industrial
 Cylinder

Sample Id.: DCG
 Reference Std. 47366AW
 Sample Temp.: 120° F
 Analysis Date: 5/13/11
 Analysis By: Andrew Dunn

Method(s): ASTM D 1945
 Gas Analysis by Gas
 Chromatography

Quality Control Report#: 1507

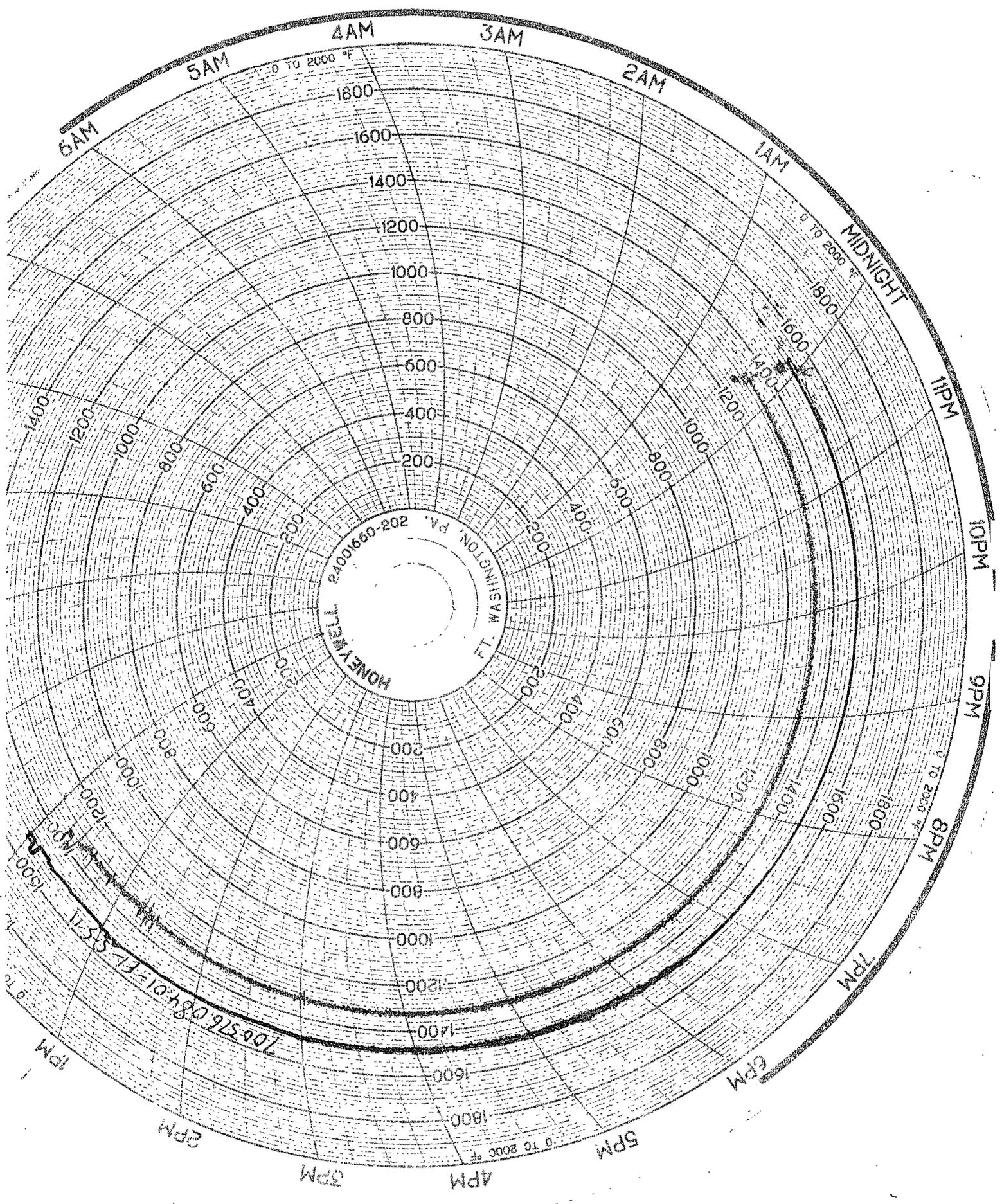
Analytical Results

RESULTS	ACTUAL	ANALYSIS			
Gas Composition			MDL	RL	% Deviation
	Mol %	Mol %	Mol %	ppm mol	(90-100%)
Nitrogen (N2):	4.926	4.9080	0.0010	10	99.6
Carbon Dioxide (CO2):	1.489	1.5073	0.0010	10	98.8
			MDL	RL	% Deviation
Hydrocarbon Composition	Mol %	Mol %	Mol %	ppm mol	(90-100%)
Methane (CH4):	69.955	69.8646	0.0001	1	99.9
Ethane (C2H6):	9.138	9.1822	0.0001	1	99.5
Propane (C3H8):	5.947	5.9777	0.0001	1	99.5
Iso-Butane (C4H10):	3.018	3.0231	0.0001	1	99.8
N-Butane (C4H10):	3.021	3.0258	0.0001	1	99.8
Iso-Pentane (C5H12):	1.001	1.0035	0.0001	1	99.7
N-Pentane (C5H12):	1.007	1.0156	0.0001	1	99.1
Hexane+ (C6H14):	0.498	0.4922	0.0001	1	98.8
Totals	100.000	100.000			

Comments - Additional Data

ACTUAL		ANALYSIS	
BTU -dry (BTU/ft3):	1322.3	BTU -dry (BTU/ft ³):	1323.4
BTU -water vapor sat. (BTU/ft3):	1316.6	BTU -water vapor sat. (BTU/ft ³):	1317.7
Specific Gravity -dry:	0.8337	Specific Gravity -dry:	0.8345
Specific Gravity -water vapor sat.:	0.8406	Specific Gravity -water vapor sat.:	0.8415
Z-Comp. Factor -dry:	0.99565	Z-Comp. Factor -dry:	0.99564
Z-Comp. Factor -water vapor sat.:	0.98309	Z-Comp. Factor -water vapor sat.:	0.98307

ATTACHMENT 3
Oxidizer Charts



GANDY CORPORATION
 P.O. BOX 2140
 LOVINGTON, NM 88260
 (575) 396-0522 FAX (575) 396-0797
 PRC 14225

invoice

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 HOUSTON, TX 77210-4648

LEASE: DCP TO LEA STATION #2
 SRS 2009-039

PAGE 1

INVOICE DATE			INVOICE NO.
5/30/11			197387
QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
	05/06/11 WT. 444981 JOB 700376-084-01		
3.25	HRS HAZMAT, DOT, COATED VACUUM TRUCK W/OPER	108.00	351.00
40.00	BELS DISPOSAL FEE EMPTY POLY TANK. HAULED 40 BELS PRODUCED WATER TO DISPOSAL.	0.85	34.00
SUBTOTAL			385.00
TAX 5.5%			21.18
INVOICE TOTAL			406.18



JUN 08 2011

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P.O. BOX 2140
 LOVINGTON, NEW MEXICO 88260

444981

Date 5/6/11 Truck No. 356
 Company Plains Pipeline Purchase Order No. _____ Invoice Number _____
 From DCP TO Lea STAZZA #2 Rig No. _____ Location _____
 To Lease _____ Well No. _____ Location _____

Time Out	A.M.	P.M.	Time In	A.M.	P.M.	TIME	RATE	AMOUNT
Diesel	Brine Water	Fresh Water						
Crude Oil	<u>Salt Water</u>	Acid	Bbbs. Hauled <u>40</u>				.85	34.00
Driver, Operator or Pusher	<u>Richard G. Lemay</u>					3.25	108.00	351.00
Helper	<u>water - 1677</u>							
Helper	<u>PSH - 14</u>							
Helper	<u>1691 TOTAL 700376.084.01</u>							
Other Charges								
Description of Work: <u>Empty POLY TANK OF P/W</u>								
<u>TAKE TO DISPOSAL - SPARKLE</u>								
<u>WAIT TIME AT DISPOSAL 30 MIN.</u>								
							Sub Total	385.00
							Sales Tax	21.18
							TOTAL	406.18
Authorized by: <u>Jason Lemay 05/20/2011</u>								

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