



engineering and constructing a better tomorrow

May 31, 2006

Mr. Arne Fennel, Chief Financial Officer  
Mainline Realty, LLC  
11900 Sam Roper Drive  
Charlotte, North Carolina 28269

Subject: **Report of Phase II Environmental Site Assessment  
Pliana, Inc. Facility  
1016 and 1024 Montana Drive  
Charlotte, North Carolina  
MACTEC Project 6228-06-3630**

Dear Mr. Fennel:

MACTEC Engineering and Consulting, Inc., (MACTEC) is pleased to provide this *Phase II Environmental Site Assessment Report* for the subject site. This work was performed as outlined in our proposal (No. Prop06chl283, dated May 12, 2006).

#### **Project Information**

The 4.47-acre site is comprised of Tax Parcels 06915540 (1024 Montana Drive, f/k/a North I-85 Service Road) and 06915541 (1016 Montana Drive) situated along the south side of Montana Drive. The site contains a light-industrial plant with associated warehouses for storage and an administrative building.

The site is currently developed with several buildings as shown on the attached aerial photograph (Figure 1). The original 1016 Building was operated as a production facility for Chem-Tex Laboratories, Inc. (Chem-Tex) prior to 1999. Chem-Tex produced textile-cleaning products by blending and processing raw materials into finished products that were transported off site in bulk containers and smaller drummed quantities. In about 1999, Chem-Tex vacated the property and removed chemicals, processing and packaging equipment, and waste material from the site. Since 1999, Pliana, Inc. occupied the front office space of the 1016 Building and utilized the main portion of the building for storage of yarn product.

Based on the results of MACTEC's (as LAW) 1999 Phase I Environmental Update (November 5, 1999), MACTEC (as LAW) conducted a Phase II Environmental Site Assessment at the former Chemical Tex facility (1016). In 1999, analysis of soil samples collected at the 1016 site identified concentrations of Total Chromium above background levels. Concentrations of organic compounds were detected, including the presence of 2-Butanone (MEK) and Acetone at concentrations of 0.11 mg/kg and 0.66 mg/kg, respectively, as well as, trace amounts of Tetrachloroethene and 1,1,1-Trichloroethane.

In our Phase II report, (dated December 10, 1999), MACTEC recommended that groundwater at the site be sampled to assess groundwater quality relative to the state groundwater standards. MACTEC was not authorized to perform the groundwater assessment.

Later, in 2002, MACTEC completed a Phase I Environmental Site Assessment Update (report dated July 26, 2002) of both parcels. Several areas of corroded concrete flooring were observed adjacent to floor drains within the 1024 plant building. Corroded flooring beneath a vat located within the plant was also observed. In the 2002 update report, MACTEC recommended soil sampling at the 1024 parcel to assess the potential impact of chemical products to soil; and groundwater sampling at the 1016 parcel.

### **Soil Sampling and Analysis**

On May 22, 2006, MACTEC's Mr. Dwain Snyder and MACTEC's subcontractor, Probe Technology, Inc. of Concord, North Carolina, mobilized to the site. Prior to the mobilization, MACTEC obtained a Subsurface Investigation Permit (SIP) from Mecklenburg County. A copy of the well permit is included in Attachment A.

Probe Technology advanced four soil borings, identified on Figure 1 as 1016-1, 1016-2, 1024-1 and 1024-2. The "1016" borings were advanced inside the original site building at 1016 Montana Drive. The "1024" borings were advanced inside the original site building at 1024 Montana Drive. MACTEC personnel retained one soil sample (3 to 5 feet depth) from each of the four borings for laboratory analysis. Continuous soil samples were collected at five-foot intervals in each boring using a MacroCore® sampler.

Borings 1016-2 and 1024-2 were extended to depths of 40 feet below ground surface (bgs) using a Geoprobe® Systems Model 6610DT direct-push rig, because these locations were selected for monitoring well installation.

The soil sample depths for the borings are shown in Table 1. Soil samples were submitted to Pace Analytical, Inc. (Pace) in Huntersville, North Carolina for the analysis. The 1016-series soil samples were analyzed by the laboratory for volatile organics (EPA Method 8260), total and hexavalent chromium. The 1024-series soil samples were analyzed for volatile organics (EPA Method 8260) and the eight RCRA total metals.

### **Groundwater Sampling and Analysis**

On the same date, MACTEC personnel supervised Probe Technology, Inc. personnel as they installed monitoring wells in the boreholes 1016-2 and 1024-2 previously discussed. The well borings were advanced using a track-mounted drill rig equipped with hollow-stem augers. The wells were installed to a depth of 40 feet, since groundwater was encountered at an average depth of 30 feet at these locations. In addition, two monitoring wells (MW-1 and MW-2) were installed in well borings advanced on the southern portion of each parcel (Figure 1). The wells were constructed and sampled to assess the groundwater in the portions of the property estimated to be hydraulically downgradient from the areas of industrial activities. Wells MW-1 and MW-2 were installed to 34 and 30 feet, respectively.

Well records for each of the four wells and MACTEC's field procedures used during the site work are included as Attachments A and B, respectively.

On May 23, 2006, MACTEC personnel collected a groundwater samples from the four wells. The samples were placed on ice and delivered to Pace for analysis of volatile organics (EPA Method 6230D) and total and dissolved metals (8 RCRA). The samples designated for dissolved metals analysis were submitted to the laboratory to be filtered to remove sediment from the water samples prior to testing. Analysis of sediment-laden water samples typically result in higher metals concentrations due to the naturally-occurring metals adsorption to the sediment.

## Results

The soil analytical results identified concentrations of tetrachloroethene (PCE) ranging from 7.5 to 18 parts per billion (ppb) in samples 1016-1, 1024-1 and 1024-2. The totals metals concentrations identified in the soil samples from the 1024 building were generally within the range of the “background” concentrations established during the 1999 soil assessment at the site. Elevated concentrations (i.e. above background) of total chromium ranging from 76 to 210 parts per million (ppm) were identified in samples 1016-1 and 1016-2. However, the identified concentrations did not exceed the applicable state standards. Furthermore, hexavalent chromium was not detected in these samples.

The groundwater analytical results identified concentrations of the organic solvent PCE at concentrations ranging from 51 to 150 ppb in water samples MW-1016, MW-1024, MW-1 and MW-2. The NC 2L Standard for PCE is 0.7 ppb. Trichloroethene, 1,1-Dichloroethene and 1,2 Dichloroethane were also identified at concentrations that exceeded their respective NC 2L standards.

The metals analyses performed on the groundwater samples identified dissolved arsenic (MW-1 and MW-2) and dissolved lead (MW-1016, MW-1024, MW-1 and MW-2) at concentrations that exceeded the respective NC 2L standards. Ironically, the dissolved arsenic concentrations were about 8 to 14 times higher than the total arsenic concentrations. Concentrations of total chromium and lead were identified in several groundwater samples that exceeded the NC 2L standards, but these elevated concentrations may be the result of suspended sediment in the sample.

## Conclusions

- The analytical results of the soil samples 1016-1 and 1016-2 identified elevated concentrations of total chromium, but they did not exceed the applicable state standards. Furthermore, hexavalent chromium (Chromium VI) was not identified in these samples. Therefore, the identified total chromium is presumed to be Chromium III, which is less toxic than chromium VI. Furthermore, the soil analytical results identified concentrations of tetrachloroethene (PCE) ranging from 7.5 to 18 parts per billion (ppb) at the 1016 and 1024 parcels. Table 1 summarizes the soil results.
- The organic groundwater analytical results identified concentrations of the organic solvent PCE at concentrations ranging from 51 to 150 ppb in water samples MW-1016, MW-1024, MW-1 and MW-2. The NC 2L Standard for PCE is 0.7 ppb. Trichloroethene, 1,1-Dichloroethene and 1,2 Dichloroethane were also identified at concentrations that exceeded their respective NC 2L standards. Table 2 summarizes the groundwater results.

- The metals analyses performed on the groundwater samples identified dissolved arsenic (MW-1 and MW-2) and dissolved lead (MW-1016, MW-1024, MW-1 and MW-2) at concentrations that exceeded the respective NC 2L standards.

### Recommendations

Based on the results of our assessment, we recommend the following:

- The soil sample 1016-2 (in storage at Pace) should be analyzed using the Toxicity Characteristic Leachability Procedure (TCLP) for Chromium to verify that it does not exceed the regulatory level of 5 mg/L for hazardous waste. If the 1016-2 sample is not analyzed within 30 days of sample collection, another sample should be collected.
- The responsible party should review the results of the assessment activities and submit them to the North Carolina Department of Environment and Natural Resources (NCDENR) review.

### Closing

MACTEC appreciates this opportunity to assist you on this project.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC



Jimmy D. Jordan, P.G.  
Project Geologist

JDJ/RCF:jew

By Anc With Permission  
Attachments



Robert C. Foster, P.G.  
Principal  
Registered, NC #1335

**TABLES**

Table 1: Soil Analytical Results  
Pliana, Inc.  
1016 and 1024 North I-85 Service Road  
Charlotte, North Carolina  
MACTEC Project No.: 6228-06-3630

Analyte	Units	1016-1 (3-5')	1016-2 (3-5')	1024-1 (3-5')	1024-2 (3-5')	IHSB SRG's	Region IX PRG Ind. Soil
Arsenic	mg/kg	NA	NA	2.6	2.1	4.4	160
Barium	mg/kg	NA	NA	51	88	None	67,000
Cadmium	mg/kg	NA	NA	<0.13	<0.12	7.4	450
Chromium	mg/kg	76	210	42	22	24,000	450
Lead	mg/kg	NA	NA	11	9.8	400	800
Selenium	mg/kg	NA	NA	<0.65	<0.62	78	5,100
Silver	mg/kg	NA	NA	<0.26	<0.25	78	3,100
Mercury	mg/kg	NA	NA	0.036	0.059	4.6	310
Hexavalent Chromium	mg/kg	<6.22	<6.41	NA	NA	44	64
Tetrachloroethene	µg/kg	18	<6	7.5	11	480	1.3
Acetone	µg/kg	130	<120	<140	<130	2,800,000	54,000,000

Notes:  
Prepared by: RCF 5-30-06  
Checked by: AJF 5-30-06

IHSB SRG's = Inactive Hazardous Sites Branch Soil Remediation Goals, January 2006  
Region IX PRG Ind. Soil - EPA Region IX Preliminary Remediation Goals for Industrial Soil, 2004

ft. bls - Feet below land surface

mg/Kg - Milligram per kilogram

µg/kg = micrograms per kilograms

**Bold** indicates constituent exceeds or potentially exceeds typical background concentrations or one of the listed comparison standards

NA = Not analyzed

**Table 2: Groundwater Analytical Results**  
**Pliana, Inc.**  
**1016 and 1024 North I-85 Service Road**  
**Charlotte, North Carolina**  
**MACTEC Project No.: 6228-06-3630**

Analyte	Units	MW-1016	MW-1024	MW-1	MW-2	NC 2L Standard
Arsenic, Total	mg/L	<0.0050	0.0064	<0.0050	<0.0050	0.05
Arsenic, Dissolved	mg/L	0.044	0.050	<b>0.054</b>	<b>0.07</b>	0.05
Barium, Total	mg/L	0.66	0.78	0.37	0.48	2.0
Barium, Dissolved	mg/L	0.016	<0.0050	0.03	0.058	2.0
Cadmium, Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.00175
Cadmium, Dissolved	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.00175
Chromium, Total	mg/L	<b>0.39</b>	<b>0.10</b>	<b>0.059</b>	0.013	0.05
Chromium, Dissolved	mg/L	0.0056	0.0023	0.023	0.004	0.05
Lead, Total	mg/L	<b>0.024</b>	<b>0.035</b>	0.014	<b>0.024</b>	0.015
Lead, Dissolved	mg/L	<b>0.059</b>	<b>0.064</b>	<b>0.059</b>	<b>0.078</b>	0.015
Selenium, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.05
Selenium, Dissolved	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.05
Silver, Total	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	0.018
Silver, Dissolved	mg/L	0.0033	0.0032	0.0038	0.0047	0.018
Mercury, Total	mg/L	<0.00020	<0.00020	0.0013	<0.00020	0.00105
Mercury, Dissolved	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	0.00105
Tetrachloroethene	µg/L	<b>150</b>	<b>140</b>	<b>51</b>	<b>56</b>	0.7
chloroform	µg/L	2.3	3.1	1.4	0.56	70
cis-1,2-Dichloroethene	µg/L	6.7	7.5	9.0	3.4	70
Trichloroethene	µg/L	<b>3.1</b>	<b>3.1</b>	1.7	<b>10</b>	2.8
1,1-Dichloroethane	µg/L	35	<0.5	27	51	70
1,1-Dichloroethene	µg/L	<b>43</b>	<0.5	<b>29</b>	<b>41</b>	7
Diisopropyl ether	µg/L	<0.5	<0.5	6.9	2.1	70
Total Xylenes	µg/L	1.4	<0.5	<0.5	<0.5	530
1,1,1,-Trichloroethane	µg/L	8	<0.5	2.2	15	200
1,2 Dichloroethane	µg/L	<0.5	<5.0	<0.5	<b>2.2</b>	0.38

Notes:

Prepared by:

RCF 5-30-06

Prepared by:

AJF 5-30-06

mg/L - milligrams per liter

µg/L - micrograms per liter

**Bold font indicates constituent exceeded the NC 2L Drinking Water Standard**

**FIGURE**

P:\AutoCAD Drawings Only\Environmental\2006\6228-06-3630 Pliana, Inc\Aerial.dwg Tue, 30 May 2006 - 12:31pm mharris



**EXPLANATION**

-  APPROXIMATE LOCATION OF SOIL BORING AND MONITORING WELL
-  APPROXIMATE LOCATION OF MONITORING WELL
-  APPROXIMATE LOCATION OF SOIL BORING
-  PROPERTY IDENTIFICATION NUMBER

REF.: 2004 AERIAL PHOTOGRAPH OF MECKLENBURG COUNTY, NC GIS POLARIS (PROPERTY OWNERSHIP LAND RECORDS INFORMATION SYSTEM).



**AERIAL PHOTOGRAPH**  
 PLIANA, INC.  
 CHARLOTTE, NORTH CAROLINA

PREPARED BY <i>RF</i>	DATE <i>5-26-06</i>	CHECKED <i>JDJ</i>	DATE <i>5-31-06</i>	JOB NO. 6228-06-3630	FIGURE 1
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**ATTACHMENT A**  
**MECKLENBURG COUNTY SIP AND MONITORING WELL RECORDS**

Mecklenburg County Health Department  
 Groundwater & Wastewater Services  
 700 N. Tryon St, Suite 211  
 Charlotte, NC 28202  
 Phone: (704) 336-5103  
 Fax: (704) 336-6894



**SUBSURFACE INVESTIGATION APPLICATION AND PERMIT**  
**Application Information**

<b>Well Owner Information</b>		Owner's Telephone #:	704-947-6878
Name of Well Owner:	<input checked="" type="radio"/> Bill To	mainline Realty, LLC	
Well Owner Mailing Address:	11900 Sam Roper Drive	City, State ZIP:	charlotte, NC 28269

<b>Agent Information (if different than Well Owner)</b>			
Name of Agent:	<input type="radio"/> Bill To	Agent's Telephone #:	
Agent Address:		City, State ZIP:	
		Fax #:	

<b>Location</b>		Parcel ID:	069-155-41
Name of Site being Investigated:	1016 Montana Drive		
Address of Site:	1016 Montana Drive	City, State ZIP:	charlotte, NC 28216

<b>Permit</b>	
<b>General Conditions of This Permit:</b>	
<ul style="list-style-type: none"> <li>• This permit shall be VALID for a period not to exceed 12 months from the date of issuance.</li> <li>• This permit is VALID for the site specified in the above application and must be on-site during the course of the investigation and made available to a Department representative upon request.</li> <li>• A Certified Well Contractor that is currently registered with the Department must perform any well contractor activities associated with this permit.</li> <li>• All wells shall be constructed to the standards of Chapter VI, Section V of the <i>Mecklenburg County Groundwater Well Rules</i>.</li> <li>• All temporary wells must be abandoned to the standards of Chapter VI, Section VI of the <i>Mecklenburg County Groundwater Well Rules</i>.</li> <li>• Registration information for all wells must be submitted to the Department within thirty (30) days of well completion.</li> </ul>	
<b>Specific Conditions of This Permit:</b>	
Date of Issuance:	5/22/2006
Permit Number:	70000641
<b>Your permit has been submitted. Please print a copy for your records.</b>	
<a href="#">Go To Well Registration</a>	

Mecklenburg County Health Department  
 Groundwater & Wastewater Services  
 700 N. Tryon St, Suite 211  
 Charlotte, NC 28202  
 Phone: (704) 336-5103  
 Fax: (704) 336-6894



**SUBSURFACE INVESTIGATION APPLICATION AND PERMIT**  
**Application Information**

<b>Well Owner Information</b>		<b>Owner's Telephone #:</b>
Name of Well Owner:	<input checked="" type="radio"/> Bill To Mainline Realty LLC	704-947-6878
Well Owner Mailing Address:	11900 Sam Roper Drive	City, State ZIP: Charlotte, NC 28269

<b>Agent Information (if different than Well Owner)</b>			
Name of Agent:	<input type="radio"/> Bill To	Agent's Telephone #:	
Agent Address:		City, State ZIP:	
		Fax #:	

<b>Location</b>	
Name of Site being Investigated:	1024 Montana Drive
Parcel ID:	069-155-40
Address of Site:	1024 Montana Drive
City, State ZIP:	charlotte, NC 28216

<b>Permit</b>
<b>General Conditions of This Permit:</b>
<ul style="list-style-type: none"> <li>• This permit shall be VALID for a period not to exceed 12 months from the date of issuance.</li> <li>• This permit is VALID for the site specified in the above application and must be on-site during the course of the investigation and made available to a Department representative upon request.</li> <li>• A Certified Well Contractor that is currently registered with the Department must perform any well contractor activities associated with this permit.</li> <li>• All wells shall be constructed to the standards of Chapter VI, Section V of the <i>Mecklenburg County Groundwater Well Rules</i>.</li> <li>• All temporary wells must be abandoned to the standards of Chapter VI, Section VI of the <i>Mecklenburg County Groundwater Well Rules</i>.</li> <li>• Registration information for all wells must be submitted to the Department within thirty (30) days of well completion.</li> </ul>
<b>Specific Conditions of This Permit:</b>
Date of Issuance: 5/22/2006
Permit Number: 70000638
<b>Your permit has been submitted. Please print a copy for your records.</b>
<input type="button" value="Go To Well Registration"/>



# WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) Terry White, Jr. CERTIFICATION # 3287

WELL CONTRACTOR COMPANY NAME Probe Technology, Inc. PHONE # (704) 933-5538

STATE WELL CONSTRUCTION PERMIT# \_\_\_\_\_ ASSOCIATED WQ PERMIT# \_\_\_\_\_  
(if applicable) (if applicable)

1. WELL USE (Check Applicable Box): Residential  Municipal/Public  Industrial  Agricultural   
Monitoring  Recovery  Heat Pump Water Injection  Other  If Other, List Use MW-1024

2. WELL LOCATION:  
Nearest Town: Charlotte County Mecklenburg  
1016 N I-85 Service Rd 28216 (Pliana)  
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting  
 Ridge  Slope  Valley  Flat  
(check appropriate box)

Latitude/longitude of well location  
N 35 16.077 W 80 52.027

(degrees/minutes/seconds)

Latitude/longitude source:  GPS  Topographic map  
(check box)

3. OWNER: Mainline Really, LLC  
Address 11900 Sam Roper Drive  
(Street or Route No.)  
Charlotte NC 28269  
City or Town State Zip Code  
(704) 947-6878  
Area code- Phone number

DEPTH		DRILLING LOG
From	To	Formation Description

See Geologist's Log

4. DATE DRILLED 05-22-06

5. TOTAL DEPTH: 40 ft

6. DOES WELL REPLACE EXISTING WELL? YES  NO

7. STATIC WATER LEVEL Below Top of Casing: 28 FT.  
(Use "-" if Above Top of Casing)

8. TOP OF CASING IS 0 FT. Above Land Surface\*  
\*Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.

9. YIELD (gpm): N/A METHOD OF TEST \_\_\_\_\_

10. WATER ZONES (depth): \_\_\_\_\_

### LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

11. DISINFECTION: Type None Amount \_\_\_\_\_

12. CASING:		Depth	Diameter	Wall Thickness	Material
From	To	Ft.		or Weight/Ft.	
0	30		2"	Sched 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:		Depth	Material	Method
From	To	Ft.		
0	26		portland cement	gravity
26	28		benonite	gravity

14. SCREEN:		Depth	Diameter	Slot Size	Material
From	To	Ft.	in.	in.	
30	40		2"	0.010	PVC
From	To	Ft.	in.	in.	

15. SAND/GRAVEL PACK:		Depth	Size	Material
From	To	Ft.	#	
28	40		#2	silica sand
From	To	Ft.		

16. REMARKS: \_\_\_\_\_

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C. WELL CONSTRUCTION STANDARDS. AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

**Michael Tynan**

Digitally signed by Michael Tynan  
DN: CN = Michael Tynan, C = US  
Date: 2006.05.28 07:49:42 -04'00'

\_\_\_\_\_  
SIGNATURE OF PERSON CONSTRUCTING THE WELL

\_\_\_\_\_  
DATE





**ATTACHMENT B  
FIELD PROCEDURES**

## FIELD PROCEDURES

The field procedures used in the performance of MACTEC's work are as follows:

### Soil Borings/Soil Sampling

Soil samples were collected from borings using Direct Push Technology employing stainless-steel core barrels to advance the borehole. In the boring, continuous soil samples were obtained in five-foot lengths with a stainless-steel sampling tube and disposable acetate tube liners.

The soil samples were placed in laboratory-prepared sample containers, marked with a unique identifying number, placed on ice in a sample cooler, and delivered to Pace Analytical, Inc. (Pace), a North Carolina certified laboratory, located in Huntersville, North Carolina for analysis. The samples were maintained under chain-of-custody protocol.

### Well Installation Activities

MACTEC's subcontractor installed Type II two-inch diameter wells for collection of groundwater samples. To reduce the potential for cross-contamination, drilling personnel steam-cleaned down-hole drilling equipment prior to drilling each well boring.

The wells consisted of 2-inch diameter PVC pipe (schedule 40 with flush-threaded joints) inserted into an 8-inch diameter borehole. The bottom section of the well was a manufactured well screen with 0.010-inch slots. Washed sand backfill was placed around the outside of the pipe to at least 1-foot above the top of the well screen. The sand backfill was used to stabilize the formation and to help yield a less turbid groundwater sample. Wetted bentonite was placed above the sand backfill to seal the borehole. The remaining annulus of the borehole was backfilled with cement to land surface. A flush-mounted steel manhole cover was installed at each well location to provide access to the well casing and protection from vehicular and pedestrian traffic.

### Monitoring Well Groundwater Sampling

A MACTEC representative developed the monitoring wells by bailing until the water's turbidity was reduced. The water level was measured with an electric water level indicator to determine depth to the water surface from the top of the PVC riser pipe. The measured water depth was used in conjunction with the total casing depth to determine the height of the water column and the volume of water in the monitoring well.

Prior to sampling, a MACTEC field representative purged the well of at least three casing volumes of water. A groundwater sample was collected using a disposable Teflon bailer. After sampling, MACTEC placed the containers on ice for delivery to the laboratory. MACTEC maintained appropriate chain-of-custody records for the sample.

**ATTACHMENT C  
LABORATORY REPORTS**