

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	<a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a>
Phone	760 355 7997

Enalytic ID	E1810041-001
Batch Number	310122018
Train Number	GATX220521
Sample ID	DEF 32.7
Date Sampled	10/12/2018
Date Received	10/16/2018
Report Date	10/18/2018

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.7% DEF Batch# 310122018 Train #GATX220521

Test Parameter/Method	Units	Test Method (ISO)	Acceptable Limit	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.3	SPT	10/17/2018	Pass
Density @ 20degC	g/cm <sup>3</sup>	3675	1.0870-1.0930	1.0900	CND	10/16/2018	Pass
Refractive Index @ 20degC	N <sub>D</sub> <sup>20</sup>	22241-2 Annex C	1.3814-1.3843	1.3825	CND	10/16/2018	Pass
Alkalinity as NH <sub>3</sub>	%	22241-2 Annex D	<0.2	0.01	CLB	10/17/2018	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	CND	10/16/2018	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5	<1.0	CLB	10/17/2018	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	CLB	10/17/2018	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	CLB	10/18/2018	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/16/2018	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/16/2018	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	BDK	10/16/2018	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	BDK	10/16/2018	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	BDK	10/16/2018	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	BDK	10/16/2018	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/16/2018	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/16/2018	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/17/2018	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.08	BDK	10/16/2018	Pass
Identity by FTIR (attached)	Spectra	22241-2 Annex J	Match	Reference Match	CLB	10/16/2018	Pass

Note 1: All ISO standards are up to date with the latest revisions.

Note 2: The acceptable values are based on the standard 32.5% unless otherwise stated, and are less than or equal to the values shown.

**"The undersigned certifies that the value(s) reported have met the highest analytical quality control standards."**

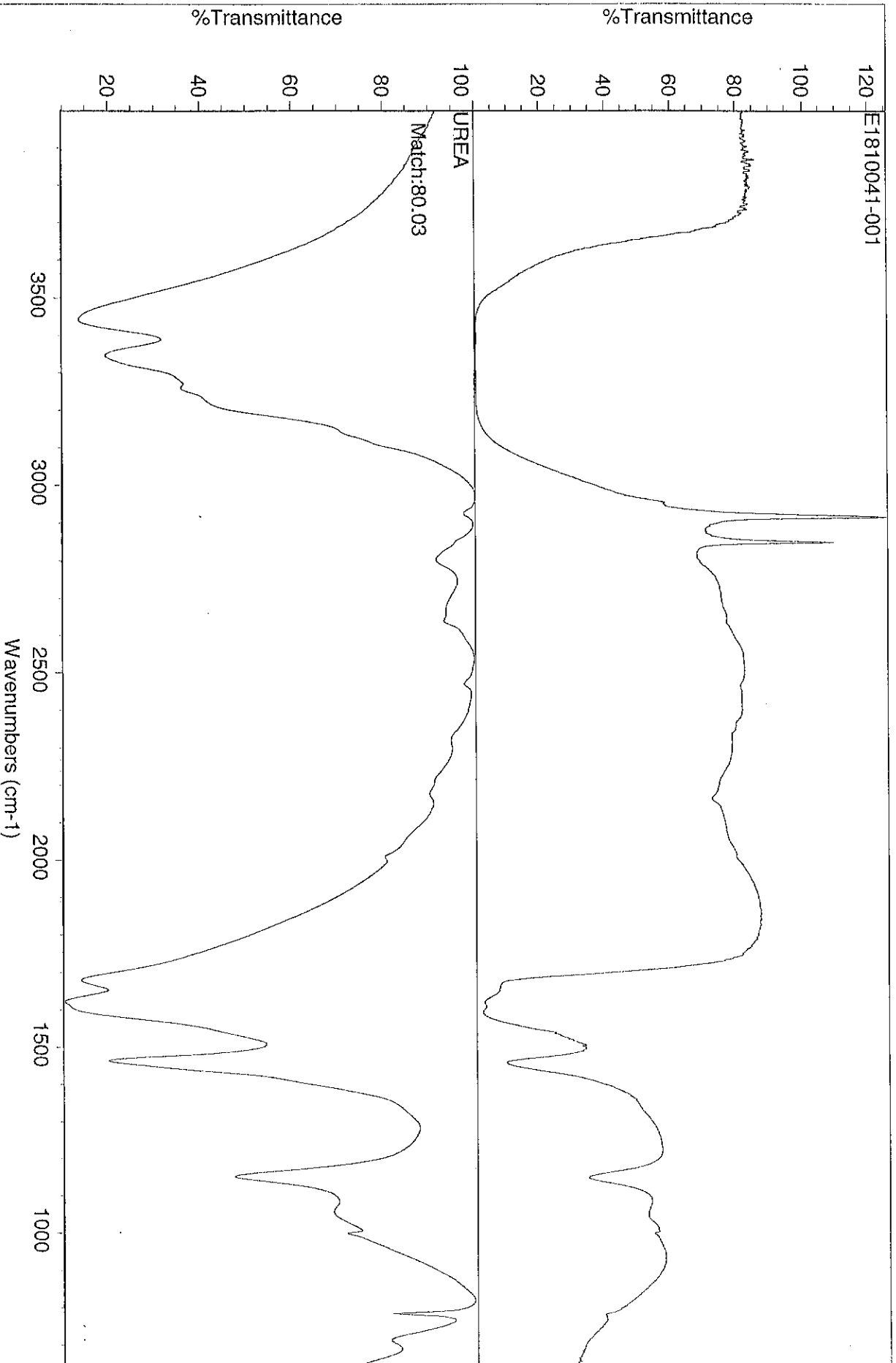


Certification Approval \_\_\_\_\_

Laboratory Director: Anthony J Scala  
 Enalytic FDA Reg. Number: 02-636-0096

Date: 10/18/2018

Search results for: E1810041-001  
Date: Tue Oct 16 09:57:28 2018 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00





# Chain of Custody Record

6034 Corporate Drive, East Syracuse, NY 13057  
 Phone: 315.437.0255 Fax: 315.437.1209

Quote Number:

Client: DEF Products, LLC		Phone # (760) 355-7997	Location (City/State): 422 E. Baroni Blvd., Imperial CA		Project # Project Name: ISO 22241 DEF Testing					Remarks Product Testing Certificate of Analysis										
Client Contact: Sharon Stegmuller		Date: 10/12/2018	Time: N/A	Matrix: Liquid	Grab or Comp: Comp	Lab Internal Use Only: E1810041	Number of Containers													
Batch # 310122018	Train # GATX220521	PERCENT DEF 32.7%																		
Parameter and Method		Sample bottle:	Type	Size	Preservative	Sampled by (Print)					Name of Courier									
1	Urea Content		HDPE	500 ml	None	Company: DEF Products, LLC					UPS 2ND Day Air A.M.									
2	Refractive Index @ 20degC					Relinquished by: (sign)					Received by: (sign)									
3	Density @ 20degC					DEF Products, LLC					Received by: (sign)									
4	Alkalinity (as NH3)					Relinquished by: (sign)					Received by: (sign)									
5	Biuret					Date					Time									
6	Aldehydes					Date					Time									
7	Insolubles					Date					Time									
8	Phosphate					Date					Time									
9	Total Metals: Al, Ca, Cr, Cu, Fe, K, Mg, Ni, Na, Zn.					Date					Time									
10	FTIR					Date					Time									

Relinquished by: (sign)  
 Date: 10/12/18  
 Time: 9:04 am  
 Rec'd for Lab by: C. S. Collins

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	<a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a>
Phone	760 355 7997

Enalytic ID	E1810049-001
Batch Number	310162018
Train Number	UTLX647962
Sample ID	DEF 32.6
Date Sampled	10/16/2018
Date Received	10/18/2018
Report Date	10/23/2018

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.6% DEF Batch# 310162018 Train #UTLX647962**

Test Parameter/Method	Units	Test Method (ISO)	Acceptable Limit	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.4	SPT	10/22/2018	Pass
Density @ 20degC	g/cm <sup>3</sup>	3675	1.0870-1.0930	1.0900	CND	10/22/2018	Pass
Refractive Index @ 20degC	N <sub>D</sub> <sup>20</sup>	22241-2 Annex C	1.3814-1.3843	1.3826	CND	10/22/2018	Pass
Alkalinity as NH <sub>3</sub>	%	22241-2 Annex D	<0.2	0.02	CLB	10/19/2018	Pass
Biuret	%	22241-2 Annex E	<0.3	0.13	CND	10/18/2018	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5	<1.0	CND	10/23/2018	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	CLB	10/19/2018	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	CND	10/22/2018	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/18/2018	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/18/2018	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	BDK	10/18/2018	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	BDK	10/18/2018	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	BDK	10/18/2018	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	BDK	10/18/2018	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/18/2018	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/18/2018	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	BDK	10/18/2018	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.13	BDK	10/18/2018	Pass
Identity by FTIR (attached)	Spectra	22241-2 Annex J	Match	Reference Match	CLB	10/18/2018	Pass

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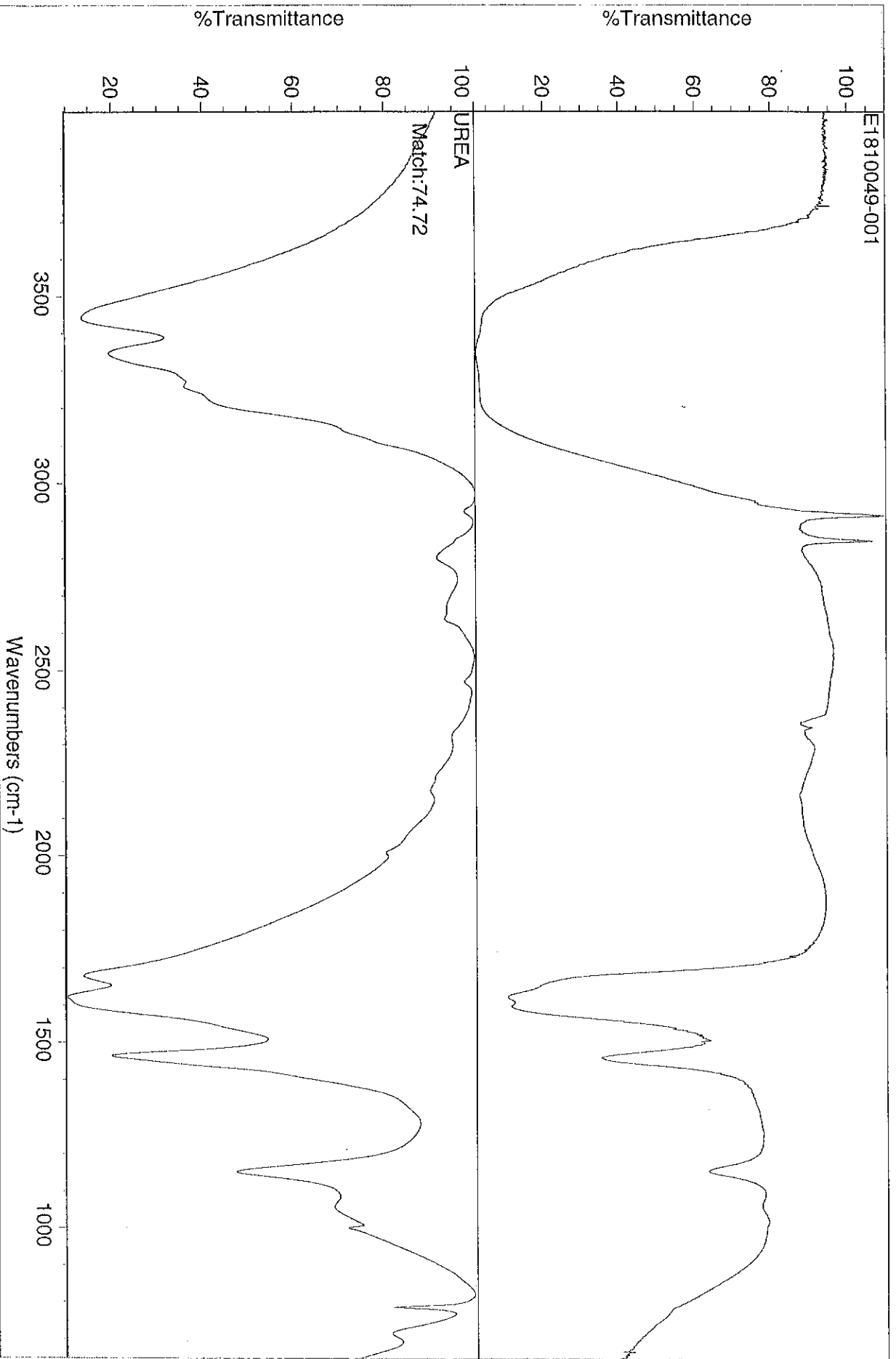
Certification Approval \_\_\_\_\_

Laboratory Director: Anthony J Scala

Enalytic FDA Reg. Number: 02-636-0096

Date: 10/23/2018

Search results for: E1810049-001  
Date: Thu Oct 18 09:10:33 2018 (GMT-04:00)  
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Regions searched: 2600.00-450.00





# Chain of Custody Record

6034 Corporate Drive, East Syracuse, NY 13057  
 Phone: 315.437.0255 Fax: 315.437.1209

Quote Number:

Client: DEF Products, LLC		Phone #	ISO 22241 DEF Testing		Project #/Project Name											
Client Contact: Sharon Stegmuller		(760) 355-7997	422 E. Barroni Blvd., Imperial CA		Location (City/State)											
Sample ID	Date	Time	Matrix	Grab or Comp	Lab Internal Use Only	Number of Containers										Remarks Product Testing Certificate of Analysis
Batch # 310162018	10/16/2018	N/A	Liquid	Comp	E1810049	1	2	3	4	5	6	7	8	9	10	
Train # UTLX647962					.001	2	X	X	X	X	X	X	X	X	X	
PERCENT DEF 32.6%																
Parameter and Method	Sample bottle:	Type	Size	Preservative	Sampled by (Print)										Name of Courier	
1 Urea Content		HDPE	500 ml	None	Company: DEF Products, LLC										UPS 2ND Day Air A.M.	
2 Refractive Index @ 20degC					Relinquished by: (sign)										Received by: (sign)	
3 Density @ 20degC					DEF Products, LLC										Received by: (sign)	
4 Alkalinity (as NH3)					Relinquished by: (sign)										Received by: (sign)	
5 Buret					Date										Received by: (sign)	
6 Aldehydes					Time										Received by: (sign)	
7 Insolubles					Date										Received by: (sign)	
8 Phosphate					Time										Received by: (sign)	
9 Total Metals: Al,Ca,Cr,Cu,Fe,K,Mg,Ni,Na,Zn.					Date										Rec'd for Lab by:	
10 FTIR					Time										C. DeMa...	