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NYSDEC - REG. 9
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"Summary Report:
Soil Sampling and Analysis"
[210 French Road
Cheektowaga, NY]

prepared for:

Rosina Food Products, Inc. 75 Industrial Parkway Buffalo, NY 14227

prepared by:

Waste Resource Associates, Inc. 2576 Seneca Avenue Niagara Falls, NY 14305

February 19, 1998

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Randolph W. Rakoczynski, P.E. NYS P.E. License No. 61392

AIPG

Mark T. Schwippert, C.P.G. A.I.P.G. Certificate No. 9446

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Introduction

Rosina Food Products, Inc. (Rosina) is seeking to acquire property located adjacent to its facility at 75 Industrial Parkway, Town of Cheektowaga, NY. The property under consideration by Rosina is identified as 210 French Road, located east of the Rosina facility and owned by CMS Associates. Acquisition of the adjacent parcel would allow Rosina to significantly expand its current operations by constructing new manufacturing and warehouse space.

Past industrial uses of the subject property has resulted in contamination of both soil and groundwater. A remedial program for site cleanup is currently being implemented by the owner.

In support of site acquisition and development, Rosina has initiated a process of environmental due diligence. As part of this process, subsurface soil samples have been collected and analyzed for site-specific contaminants. An evaluation of subsurface conditions with respect to support characteristics and potential load bearing capacity has also been performed.

Waste Resource Associates, Inc. has compiled this report in order to summarize the results of soil sampling and analysis conducted on the subject property.

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Project Overview

Field sampling was conducted on the subject property on Wednesday, February 4, 1998. A representative of Waste Resource Associates, Inc. (Mark T. Schwippert, CPG-Environmental Geologist) was present on-site to direct operations and observe sampling procedures. Weather conditions during field work consisted of overcast skies and cold with temperatures around 20°F - 25°F.

A truck-mounted drill rig was mobilized to the site to perform soil sampling at a total of six (6) locations (See Figure 1). The locations of the soil borings were selected in order to characterize subsurface materials in those areas where foundation excavation would occur as part of proposed new construction. Each soil boring was advanced from the ground surface to refusal at the top of bedrock. Continuous split-spoon sampling and Standard Penetration Testing (ASTM D1586) was performed.

Field evaluation of subsurface samples consisted of a visual examination and description and a scan for volatile petroleum hydrocarbon emissions using a photoionization detector (HNu Model PI-101).

A single composite soil sample was collected from each soil boring and was submitted for analysis for volatile organic compounds.

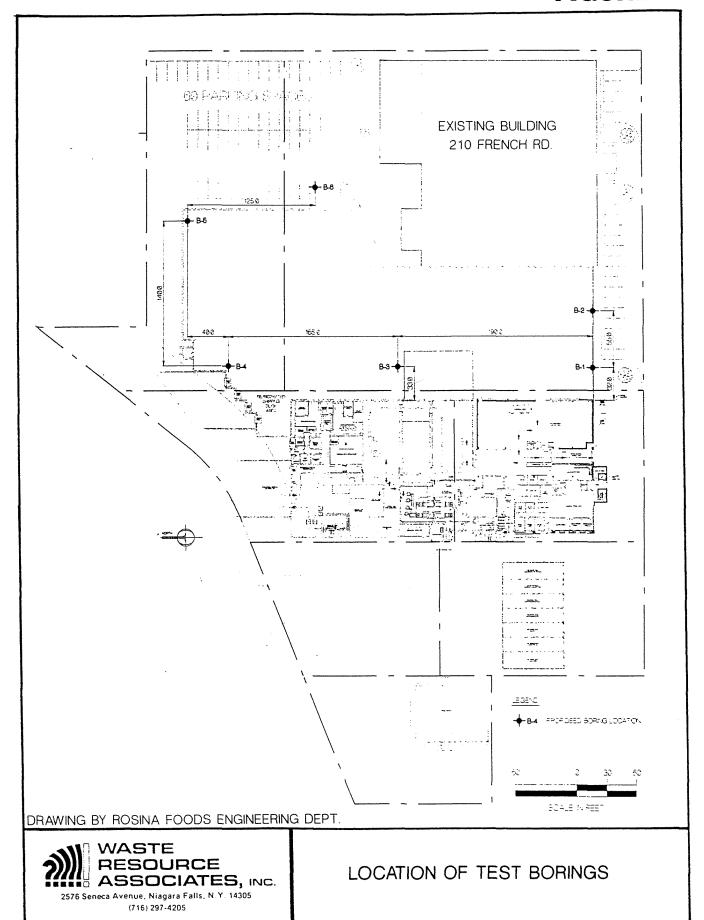
Characterization of Subsurface Conditions

The Soil Survey of Erie County, NY (USDA Soil Conservation Service, December, 1986) identifies soils at the subject property as being Urban Land - Ud (see Exhibit 1). This map unit is a miscellaneous area in which 80% or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures. Differentiation of individual soil types within these areas was not performed.

A more detailed description of soils at the subject property is given by Muller (Quaternary Geology of New York, Niagara Sheet, 1977) identifying subsurface materials as primarily lake silts, sand and clay. Sediments are described as being silts, fine to medium sands and clay which range from being thinly inter-bedded to massive and exhibit moderate bedding plane permeability.

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FIGURE 1



Bedrock at the site is identified as the Stafford Limestone. The Stafford is predominantly a massive limestone and is present at shallow depths across the site. Figure 2 of this report is a structure contour map which shows the depth of bedrock below the ground surface. At the south end of the site, bedrock is encountered at approximately seven (7) feet below grade. Gradual shallowing occurs to the north with depths of less than three (3) feet being observed.

Analysis of Soil Boring Logs

Soil boring logs were generated at each of six (6) test locations and are included in Exhibit 2 of the report. Standard Penetration Testing (ASTM-D1586) data and soil descriptions using the Unified Soil Classification System (ASTM-D2487) are included on the boring logs. Guidelines for evaluating soil descriptions and SPT data are presented in Exhibit 3.

As described on the boring logs, a surface layer of fill material is encountered across the site. The material is primarily gravel used as structural fill during construction of the parking lot area. Soils beneath the fill material consist primarily of clayey silt with lesser amounts of fine to coarse sands and traces of glacial gravels. Limestone bedrock was encountered at depths ranging from 3.5 feet at B-5 to 7.1 feet at B-2 (see Figure 2).

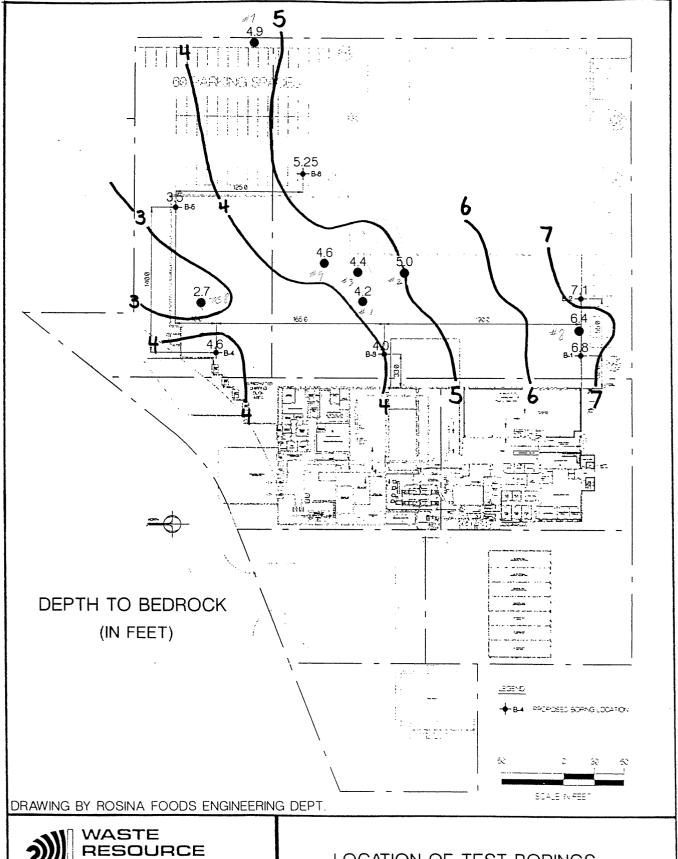
The recorded "N" values developed during Standard Penetration Testing averaged approximately twenty (20) blows. This data correlates to medium relative densities for granular (non-cohesive) soils and very stiff consistency for cohesive soil. The reported "N" values are consistent with data generated by previous subsurface investigations.

Analytical Testing Results

Composite samples collected at each of the six (6) soil boring locations were delivered to ExpressLab (Middlesex, NY) for analytical testing. Samples were analyzed for volatile organics (including halogenated compounds) by EPA Method 624 CG/MS. Final test results along with chain of custody documentation is included in Exhibit 4 of this report.

Analysis of samples from soil borings B-1, B-2, B-3, B-5 and B-6 did not report any test constituent as being present at concentrations exceeding the limit of detection. A total of three (3) constituents were detected at low levels in sample B-4. The test results for sample B-4 are summarized below.

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ASSOCIATES, INC.

2576 Seneca Avenue, Niagara Falls, N.Y. 14305 (716) 297-4205

LOCATION OF TEST BORINGS

Sample B-4 Test Results

Constituents	Concentrations	(ppb*) Threshold Limit** (ppb)
1,1 Dichloroethane	4.2	200
Tetrochloroethene	18.3	1,400
Trichloroethene	6.6	700

The reported concentrations only slightly exceed detection limits and are significantly below NYSDEC Soil Cleanup Guidelines. Detection of these compounds at the reported concentrations should not be considered of concern.

^{*}ppb - parts per billion

^{** -} NYSDEC-TAGM 1994 Soil Cleanup Objectives to Protect Ground Water Quality

Conclusions/Recommendations

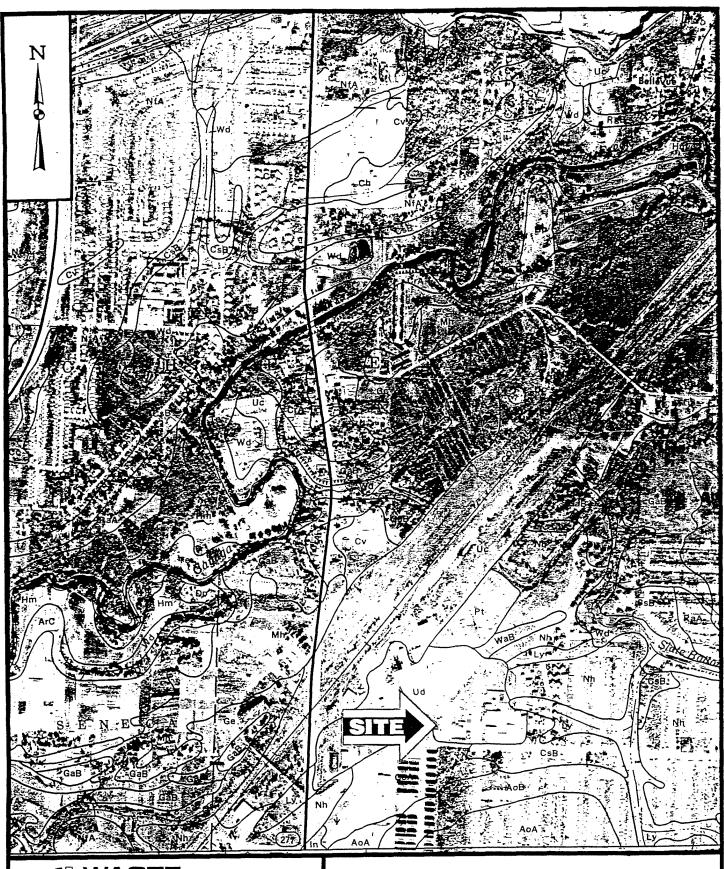
Based on the observations and testing data summarized by this report, the following conclusions/recommendations are offered:

- 1) Analytical testing of subsurface soil samples for volatile organic compounds by EPA Method 624 did not report any constituents which exceed NYSDEC regulatory thresholds.
- 2) Native soils at the site consist predominantly of clayey silts with trace amounts of sand and fine gravel. A thin layer of brecciated (broken) limestone is encountered at the bedrock interface.
- 3) Competent limestone bedrock is encountered at shallow depths across the site ranging from about seven (7) feet below grade at the south end to about three (3) feet below grade at the north end.
- 4) Characterization of subsurface conditions including soil type, soil density, bedrock lithology and depth to bedrock suggest adequate bearing capacity. Due to the presence of shallow bedrock, it is likely that a majority of foundation footers will have bearing directly on the bedrock surface. In those areas where direct bearing on bedrock does not occur, it is recommended that placement procedures and material selection for all fill placed beneath, adjacent or above foundations should comply with "General Earthwork Specifications" included in Exhibit 5.

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Exhibit 1

Soil Survey of Erie County





SOIL SURVEY OF ERIE COUNTY

Ud—Urban land. This map unit is a miscellaneous area in which 80 percent or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures. It includes parking lots, shopping and business centers, and industrial parks—in the cities of Buffalo and Lackawanna but also the business districts and adjacent shopping centers of villages in the suburban area near Buffalo. These areas generally range from 3 to 500 acres or more and are mostly nearly level to sloping.

Included in mapping are some landfills that have not been built upon or covered with asphalt. In many of these, several feet of fill has been placed over marshes and flood plains. The included areas range up to 3 acres.

It was not practical to examine and identify the soils underlying these impervious Urban land areas. Careful onsite investigation is necessary to determine the suitability and limitations of any abandoned areas for any proposed use. Some abandoned areas are suitable for asphalt-covered playgrounds or other recreation uses requiring a hard, impervious surface.

These Urban lands have not been assigned a capability subclass.

Exhibit 2

Soil Boring Logs

DATE: SJB SERVICES, INC. STARTED 2/4/98 HOLE NO. B-1 **FINISHED** 2/4/98 SUBSURFACE LOG SURF. ELEV --SHEET <u>1</u> OF <u>1</u> G.W. DEPTH See Notes PROJECT: Proposed Expansion LOCATION: Rosina Foods PROJ. NO.: D-1180 French Rd, West Seneca, NY BLOWS ON SAMPLER SOIL OR ROCK DEPTH NOTES 0/6 6/12 12/18 N NO CLASSIFICATION AUGER ASPHALTIC CONCRETE 8 8 GRAVEL (FILL) 2 6 6 Brn. - Black CRUSHED Stone and Silt (moist, FILL) 8 10; 14 Tan-Brn. Clayey SILT, some-and f-c Sand, tr. gravel 3 6 (moist-wet, medium, ML) 14 16 23 Becomes Brn. (stiff) 17 50/0.4 REF Boring Complete with Sample Spoon Refusal at 6.8'

	2° SPOON 12° WITH A 140 LB. PIN WT. FALLING 30° PER BLOW	CLASSIFICATION:
DRILLER: K. Fuller	DRILL RIG TYPE : CME 85	VISUAL BY GEOLOGIST
METHOD OF INVESTIGATION ASTM	D-1586 USING HOLLOW STEM AUGERS	

DATE: STARTED FINISHED SHEET PROJECT	2/4/98 1 OF 1 T: Proposed Ex		SJB SERVICES, INC. SUBSURFACE LOG LOCATION: Rosina Foods French Road,	HOLE NO. B-2 SURF. ELEV G.W. DEPTH See Notes West Seneca, NY
DEPTH	SMPL BLOWS ON SAN	MPLER	SOIL OR ROCK	NOTES
FT	NO 0/6 6/12 12/		CLASSIFICATION	
111	AUGER		ASPHALTIC CONCRETE	,
	1 10 17		Black SILT, little f-c Sand (moist, FILL)	
	2 6 6		Brn. Silty CLAY, tr. sand, tr. gravel (moist, FILL)	
	9 10	15	,	
5 _ /_	3 6 6	<u>i i i i i i i i i i i i i i i i i i i </u>	Orange-Brn. Clayey SILT, some f-c Sand, tr. gravel	
	7 7	13	(moist-wet, medium, ML)	
	4 11 14 50/0.2	REF	•	
15			Boring Complete with Sample Spoon Refusal at 7.2'	No Free Standing Water Reading Obtained at Boring Completion.
35				

N =	NO.	BLOWS	то	DRIVE	2"	SPOON	12"	WITH	Α	140	LB.	PIN	WT.	FALLING	30*	PER	BLOW	CLASSIFICATION:
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STAF	DATE: STARTED 2/4/98 FINISHED 2/4/98 SHEET 1 OF 1							SJB SERVICES, INC. SUBSURFACE LOG	HOLE NO. B-3 SURF. ELEV G.W. DEPTH See Notes							
PRC	JEC	CT:	Prop	osed	Ехр	ansic	LOCATION: Rosina Foods									
PRC	J. N	10.:	D-1	180				French Road, West Seneca, NY								
DEPTH		SMPL	BLO	40 2WC	N SAMPI	LER		SOIL OR ROCK	NOTES							
FT		NO	0/6		12/18	N		CLASSIFICATION								
	i Ū	1	4	12	15	27		ASPHALTIC CONCRETE								
	\angle				ļ			GRAVEL (FILL)								
-	_ /	2	17	<u></u>				Brn-Grey CRUSHED Stone (moist, FILL)	·							
-	/_		14	50/0).4	23		Yellow-Brn. f-c SAND and Silt, tr. gravel (moist-wet,	<u></u> _							
5 .	-		,	:	<u> </u>	 		firm, SM)	•							
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-								Boring Complete with Sample Spoon Refusal at 3.9' and Auger Refusal at 4.0'	No Free Standing Water Encountered at Boring Completion.							
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N = NO. BLOWS TO DRIVE 2º SPOON 12º WITH A 140 LB. PIN WT. FALLING 30º PER BLOW CLASSIFICATION:

DRILLER: K. Fuller

DRILL RIG TYPE : CME 85

VISUAL BY GEOLOGIST

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DATE.

STARTED FINISHED 2/4/98 2/4/98 SJB SERVICES, INC. SUBSURFACE LOG



HOLE	NO.	B-4
SURF.	ELEV	

G.W. DEPTH See Notes

SHEET ____1 OF __1

PRO	JEC	T:	Prop	osec	і Ехр	ansion		LOCATION: Rosina Foods	S							
PROJ. NO.:			D-1	180				French Road, West Seneca, NY								
DEPTH FT.		SMPL NO	BL0		N SAMP			SOIL OR ROCK CLASSIFICATION	NOTES							
-		1			17			ASPHALTIC CONCRETE								
-	1			1	1	20		GŘAVEL (FILL)	_							
_	1	2	9	10	-		`·····	Brn. Clayey SILT, tr. sand (moist, hard, ML)								
_	1/1		·	25		24	***************************************	Contains some f-c Sand (wet, stiff)								
		3	27	******************		REF		- Grey LIMESTONE Rock Fragments (wet)	· · · · · · · · · · · · · · · · · · ·							
5 _					-			ersy Emiles (or the tree of th	· · · · · · · · · · · · · · · · · · ·							
10								Boring Complete with Sample Spoon Refusal at 4.6'	No Free Standing Water Reading Obtained at Boring Completion.							
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N	=	NO.	BLOWS	то	DRIVE	2*	SPOON	12"	WITH A	A 14	0 LB	PIN	WT.	FALLING	30*	PER	BLOW	CLASSIFICATION

DRILLER: K. Fuller DRILL RIG TYPE : CME 85 METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

VISUAL BY GEOLOGIST

	DATE:
!	CTADTE

SJB SERVICES, INC.



HOLE NO. B-5

2/4/98 STARTED **FINISHED** SUBSURFACE LOG SURF. ELEV 2/4/98 SHEET ____1 OF __1 G.W. DEPTH See Notes PROJECT: Proposed Expansion LOCATION: Rosina Foods PROJ. NO.: D-1180 French Road, West Seneca, NY SOIL OR ROCK **NOTES** . BLOWS ON SAMPLER DEPTH SMPL 0/6 6/12 12/18 CLASSIFICATION ASPHALTIC CONCRETE 12 12 24 Brn. f-c SAND and Clayey Silt, tr. gravel (moist, FILL) REF Orange-Brn. Clayey SILT, and f-c Sand (moist, ML) 7 50/0.0 Boring Complete with Sample Spoon Refusal at 2.5' . No Free Standing Water Reading Obtained at Boring Completion.

N = NO. BLOWS TO DRIVE 2" SPOON 12" WITH A 140 LB. PIN WT. FALLING 30" PER BLOW CLASSIFICATION:

DRILLER: K. Fuller

DRILL RIG TYPE : CME 85

VISUAL BY GEOLOGIST

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DATE: STARTED 2/4/98 FINISHED 2/4/98 SHEET1_OF1_	SJB SERVICES, INC. SUBSURFACE LOG	HOLE NO. B-6 SURF. ELEV G.W. DEPTH See Notes									
PROJECT: Proposed Expansio	LOCATION: Rosina Foods French Road, West Seneca, NY										
PROJ. NO.: D-1180											
DEPTH	SOIL OR ROCK CLASSIFICATION	NOTES									
1 woh 2 6 6 7 6 7 6 7 6 7 6 7 6 7 7	BrnBlack Clayey SILT, little f-c Sand, tr. gravel, tr. organics (moist, FILL)	woh= weight of hammer and rods									
13 15 20	`										
5 3 15 20	Yellow-Brn. f-c SAND, and Silt, tr. clay (moist, SM-SC)										
50/0.3 REF	Boring Complete with Sample Spoon Refusal at 5.3'	No Free Standing Water Reading Obtained at									
10		Boring Completion.									
15		:									
_ 20											
25	\\\\										
_ 30 _											
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N = NO. BLOWS TO DRIVE 2" SPOON 12" WITH A 140 LB. PIN WT. FALLING 30" PER BLOW CLASSIFICATION: DRILLER: K. Fuller DRILL RIG TYPE : CME 85

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

VISUAL BY GEOLOGIST

Exhibit 3

Geotechnical Reference Standards

A BRIEF DESCRIPTION OF THE UNIFIED SOIL SYSTEM

The Unified Classification System is an engineering soil classification that is an outgrowth of the Air-Field classification developed by Casagrande.

The system incorporates the textural characteristics of a soil into the engineering classification. All soils are classified into fifteen groups, each group being designated by two letters. These letters are as follows: G—gravel, S—sand, M—Non plastic or low plasticity fines, C—plastic fines, Pt—peat, humus and swamp soils, O—organic, W—well graded, P—poorly graded, L—low liquid limit, H—high liquid limit.

GW and SW Groups

These groups comprise well graded gravelly and sandy soils which contain less than 5% of non plastic fines passing a #200 sieve. Fines which are present must not noticeably change the strength characteristics of the coarse grain fraction and must not interfere with its free draining characteristics. In areas subject to frost action the material should not contain more than about 3% of soil grains smaller than .02 millimeters in size.

GP and SP Groups

These groups are poorly graded gravels and sands containing less than 5% non plastic fines. They may consist of uniform gravels, uniform sands, or non uniform mixtures of very coarse material and very fine sand with intermediate sizes lacking. Materials of this latter type are sometimes referred to as skip graded, cap graded, or step graded.

GM and SM Groups

In general, these groups include, gravels or sands which contain more than 12% of fines having little or no plasticity. The plasticity index and liquid limit of a soil in either of these groups plot below the "A" line on a plasticity chart. Gradation is not important and both low grade and poorly graded materials are included. Some sands and gravels in these groups may have a binder composed of natural cementing agents so proportioned that the mixture shows negligible swelling or shrinkage. Thus, the dry strength is provided by a small amount of soil binder or by cementation of calcareous materials or iron oxide. A fine fraction of non cemented materials may be composed of silts or rock flour types having little or no plasticity, and the mixture will exhibit no dry strength.

GC and SC Groups

These groups comprise gravelly or sandy soils with more than 12% of fines which exhibit either low or high plasticity. The plasticity index and liquid limit of a soil in either of these groups plot above the "A" line on the plasticity chart. Gradation of these materials is not important. Plasticity of the binder fraction has more influence on the behavior of the soils than does the variation in gradation. A fine fraction is generally composed of clays.

ML and MH Groups

These groups include predominantly silty materials and micaceous or diatomaceous soils. An arbitrary division between the two groups has been established with a liquid limit of 50. Soils in these groups are sandy silts, clayey silts or organic silts with relatively low plasticity. Also included are loessial soils and rock flours. Micaceous and diatomaceous soils generally fall within the MH group, but may extend into the ML group when their liquid limit is less than 50. The same is true for certain types of kaolin clays and some illite clays having relatively low plasticity.

CL and CH Groups

The CL and CH groups embrace clays with low and high liquid limits respectively. They are primarily inorganic clays. Low plasticity clays are classified as CL and are usually lean clays, sandy clays, and silty clays. The medium plasticity and high plasticity clays are classified as CH. These include fat clays, gumbo clays, certain volcanic clays and bentonite.

OL and OH Groups

The soils in these groups are characterized by the presence of organic matter including organic silts and clays. They have a plasticity range that corresponds with the ML and MH groups.

Pt Group

Highly organic soils which are very compressible have undesirable construction characteristics are classified in one group with the symbol Pt. Peat, humus and swamp soils with a highly organic texture are typical of the group. Particles of leaves, grass, branches of bushes and other fibrous vegetable matter are common components of these soils.

Borderline Classification

Soils in the GW. SW, GP and SP groups are non plastic materials having less than 5% passing the #200 sieve, while GM, SM, GC, and SC soils have more than 12% passing the #200 sieve. When these coarse grain materials contain between 5% and 12% of fines they are classified as borderline, and are designated by the dual symbol such as GW-GM. Similarly coarse grain soils which have less than 5% passing the #200 sieve, but which are not free draining or in which the fine fraction exhibits plasticity are also classed as borderline and are given a dual symbol. Still another type of borderline classification occurs when a liquid limit of a fine grain soil is less than 29 and the plasticity index lies in the range of four to seven. These limits are indicated by the shaded area on the plasticity chart.

Silty and Clayey

In the Unified System, these terms are used to describe soils whose Atterberg limits plot below and above the "A" line on the plasticity chart. The adjectives silty and clayey are used to describe soils whose limits plot close to the "A" line.

SOIL CLASSIFICATION CHART (Unified Soil Classification System)

	MAJOR DIVISIONS		GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
	GRAVELS-	Clean Gravels (little or no		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	More than 50% of coarse	fines)	0000	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
COARSE-GRAINED	fraction larger than No. 4 sieve	Gravels with appreciable	1.60.	GM	Silty gravels, gravel-sand-silt mixtures
SOILS More than 50% of material		amounts of fines		GC	Clayey gravels, gravel-sand-clay mixtures
larger than No. 200 sieve	SANDS-	Clean sands (little or		SW	Well-graded sands, gravelly sands, little or no fines
	Less than 50% of coarse fraction larger	no fines)		SP	Poorly-graded sands, gravelly sands, little or no fines
	than No. 4 sieve	Sand with appreciable amounts of fines		SM	Silty sands, silt-sand mixtures
				SC	Clayey sands, sand-clay mixtures
	SILTS AND CLAYS Low plasticity Liquid Limit < 50%			ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			11/1/1	Cr	Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clays, lean clays
FINE-GRAINED SOILS Less than 50%				OL	Organic silts and organic silty clays of low plasticity
of material larger than No. 200 sieve				МН	Inorganic silts, micaceous or diatomaceous fine sand or silty soils
	SILTS AN			CH	Inorganic clays of high plasticity, fat clays
	Liquid li	High plasticity Liquid limit > 50%		ОН	Organic clays of medium to high plasticity, organic silts
	Highly Org	anic Soils		Pt	Peat, humus, swamp soils with organic contents
	Miscellaneous Fill			FILL	Miscellaneous fill may belong in any division but is identified as FILL

angity Description						
Dooca iptic	n of Granular Soil	Consistency Descrip	tion of Cohesive Soil		Grain Size	
Number of Blow per ft., N.	Relative Density	Number of Blo per ft., N.	ws Consistency	Cobble - pr	eater than 12 inch diameter ussing 12 inch, retained on 3 incl ussing 3 inch, retained on No. 4	
		Below 2	Very soft		eve	
0-4 4-10	Very loose Loose	2-4 4-8	Soft Medium		parse - passing No. 4 sieve, stained on No. 10 sieve	
10-30	Hedium	8-15	Stiff		dium - passing No. 10 sieve,	
30-50	Dense	15-30	Very stiff		stained on No. 40 sieve	
Over 50	Very dense	Over 30	. Hard		ine - passing No. 40 sieve, stained on No. 200 sieve	
		·			.074 mm to 0.005 mm	
			ations Used		naller than 0.005 mm	
	on of Percentage or	VDDLGAT	In Soil	Clay - L	ualler chan 0.005 mm	
	ons Used in Soil Classification	Sample Cl	assification		Plasticity	
Trace Little	0-10%	f - fine m - medium	v - very gr - gray	Non-plastic	- A 1/8 inch thread cannot be rolled at any water content.	
Some	20-35%	c - coarse	bn - brown	Slight		
And	35-50%	f/m - fine to m	medium yel - yellow	plasticity -	The thread can barely be rolled	
70.0	22 271	f/c - fine to c	coarse sl - slight	Moderate		
		tr - trace		Plasticity -		
					little time is required to	
	Moistu	re '			reach plastic limit.	
				Plastic -	Considerable time is required	
Dry - Abset	nce of moisture, dus	ty, dry to the touch.		Plastic -	to reach plastic limit. Thread	
ioist - Small	quantity of moistu:	re. Soil usually above	groundwater level.	Plastic -	to reach plastic limit. Thread can be re-rolled several times	
ioist - Small	l quantity of moistu: ture noticeable to t	re. Soil usually above he touch. Soil may be b	melow groundwater level.	Plastic -	to reach plastic limit. Thread	
Hoist - Small Wat - Moist	l quantity of moistu: ture noticeable to t	re. Soil usually above he touch. Soil may be h lly soil is below grour	melow groundwater level.		to reach plastic limit. Thread can be re-rolled several times after reaching the plastic	
Moist - Small Wet - Moist Saturated - Visil	l quantity of moistu- cure noticeable to ti ole free water, usua	re. Soil usually above he touch. Soil may be h lly soil is below grour	eelow groundwater level.		to reach plastic limit. Thread can be re-rolled several times after reaching the plastic	
Hoist - Small Net - Hoist Saturated - Visil Bedd	l quantity of moistu- ture noticeable to to ole free water, usua	re. Soil usually above he touch. Soil may be h lly soil is below grour TERMINOLOGY	below groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness	DN .	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture	
Hoist - Small Net - Hoist Saturated - Visil Bedd	ing ss than 0.02 ft.	re. Soil usually above he touch. Soil may be h lly soil is below groun TERMINOLOGY Very Soft or Plastic -	welow groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumb	on O	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small	
Hoist - Small Net - Moist Saturated - Visil Bedd Arting Lei	ing ss than 0.02 ft.	re. Soil usually above he touch. Soil may be h lly soil is below groun TERMINOLOGY Very Soft or Plastic Soft	Delow groundwater level. DEED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumb Can be scratched with fi	אס o ngernail	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small they cannot be distinguished with	
Hoist - Small Net - Hoist Saturated - Visil Bedd arting Let and hin bed	ing ss than 0.02 ft. 0.02 to 0.2 ft.	re. Soil usually above he touch. Soil may be h lly soil is below groun TERMINOLOGY Very Soft or Plastic Soft	welow groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumb	ngernail	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small	
Bedd. Arting Lei and and and and and and and an	ing ss than 0.02 ft. 0.02 to 0.2 ft. 0.5 to 1.0 ft.	TERMINOLOGY Very Soft or Plastic - Soft Moderately Hard -	Delow groundwater level. DEED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumb Can be scratched with fi Can be scratched easily	ngernail with knife; a fingernail	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small they cannot be distinguished with the naked eye. Very Fine Crystalline - Crystals	
Bedd. Arting Lei and and hin bed bick bed	I quantity of moistu- cure noticeable to the cole free water, usual ling Es than 0.02 ft. 0.02 to 0.2 ft. 0.2 to 0.5 ft. 0.5 to 1.0 ft. 1.0 to 2.0 ft.	TERMINOLOGY Very Soft or Plastic - Soft - Moderately Hard -	welow groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumb Can be scratched with fi Can be scratched easily cannot be scratched with	ngernail with knife; a fingernail	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small they cannot be distinguished with	
Bedd. Arting Lei and and hin bed bick bed	I quantity of moistu- cure noticeable to the cole free water, usual ling Es than 0.02 ft. 0.02 to 0.2 ft. 0.2 to 0.5 ft. 0.5 to 1.0 ft. 1.0 to 2.0 ft.	TERMINOLOGY Very Soft or Plastic - Soft - Moderately Hard - Wery hard -	welow groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumb Can be scratched with fi Can be scratched easily cannot be scratched with Difficulty to scratch wi	ngernail with knife; a fingernail	can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small they cannot be distinguished with the naked eye. Very Fine Crystalline - Crystals barely discernible with the nake eye.	
Hoist - Small Net - Hoist Saturated - Visil Bedd arting Lei and hin bed edium bed hick bed	ing Lore noticeable to the control of the free water, usual control of the contr	TERMINOLOGY Very Soft or Plastic - Moderately Hard - Hard -	welow groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumb Can be scratched with fi Can be scratched easily cannot be scratched with Difficulty to scratch wi	ngernail with knife; a fingernail	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small they cannot be distinguished with the naked eye. Very Fine Crystalline - Crystals barely discernible with the naked	
Moist - Small Wet - Hoist Saturated - Visil Bedd arting Leg and hin bed edium bed hick bed assive Over	ing ss than 0.02 ft. 0.02 to 0.2 ft. 0.10 to 0.2 ft. 10.10 to 0.2 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft. 10.10 to 0.10 ft.	re. Soil usually above he touch. Soil may be h lly soil is below groun TERMINOLOGY Very Soft or Plastic - Soft - Moderately Hard - Hard - Very hard -	welow groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumber the scratched with firm the scratched with process of the scratched with difficulty to scratched with the cannot be scratched with the cannot be scratched with the scratched	ngernail with knife; a fingernail th knife a knife	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small they cannot be distinguished with the naked eye. Very Fine Crystalline - Crystals barely discernible with the nake eye. Crystalline - Crystals are media	
Bedd. Arting Lei And In bed Artin bed Artin bed Artick	ing See than 0.02 ft. 0.02 to 0.2 ft. 0.2 to 0.5 ft. 0.5 to 1.0 ft. 1.0 to 2.0 ft. 2.0 ft.	re. Soil usually above he touch. Soil may be h lly soil is below groun TERMINOLOGY Very Soft or Plastic - Soft - Moderately Hard - Wery hard - Voids eir presence is indicate	welow groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumber the scratched with fire the scratched with fire cannot be scratched with Difficulty to scratch with Cannot be scratched with cannot be scratched with the cannot be scratche	ngernail with knife; a fingernail th knife a knife	to reach plastic limit. Thread can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small they cannot be distinguished withe naked eye. Very Fine Crystalline - Crystals barely discernible with the nake eye. Crystalline - Crystals are medians.	
Bedd. Arting Lei Ain bed Addium bed Aick bed Assive Over Durous - Smaller Atted - Pinhead Core ma	ing ss than 0.02 ft. 0.02 to 0.2 ft. 0.5 to 1.0 ft. 1.0 to 2.0 ft. 2.0 ft. 2.0 ft. 3.5 to 1.4 inch. by be described as ho	re. Soil usually above he touch. Soil may be he ly soil is below groun TERMINOLOGY Very Soft or Plastic - Soft - Moderately Hard - Voids eir presence is indicate if only thin walls separetely may combed.	welow groundwater level. dwater level. USED FOR ROCK DESCRIPTION Hardness Can be indented w/ thumber the scratched with firm the scratched with process of the scratched with difficulty to scratched with the cannot be scratched with the cannot be scratched with the scratched	ngernail with knife; a fingernail th knife knife chief	can be re-rolled several times after reaching the plastic limit. Crystallinity or Texture Dense - Crystals are so small they cannot be distinguished with the naked eye. Very Fine Crystalline - Crystals barely discernible with the nake eye. Crystalline - Crystals are medical size -up to 1/8 inch diameter.	

Cavity - Larger than the diameter of the core.

Exhibit 4

Final Analytical Testing Results

PO Box 40 5611 Water Street Middlesex NY 14507

Tel: (716) 554-5347

Tel: (800) THE LABS

Tel: (800) 843-5227

FAX: (716) 554-4114

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

Cust WASTE RESOURCE ASSOC.

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

Phone

716-297-4205

FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Soil=ug/kg ppb

Results shown are:

Volatile Organic Analytes

Detection Limits* = *See Individual Limit

Water=ug/L ppb

Analysis Method:

Extraction Method: EPA 5030 Purge & Trap EPA 624 GC/MS

Sample ID (LAB)

Sample ID#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

Vinyl Chloride

Chloromethane

Bromomethane

Chloroethane

Dichlorodifluoromethane

Trichlorofluoromethane

trans-1,2-Dichloroethene

Methyl-tert-butyl ether

1.1-Dichloroethene

Methylene Chloride

1,1-Dichloroethane

2,2-Dichloropropane

Methyl ethyl ketone

Chloroform

Bromochloromethane

1,1,1-Trichloroethane

1,1-Dichloropropene

cis-1,2-Dichloroethene

1	6522	
B-1		
SOIL		

MARK SCHWIPPERT

02/04/98 02/06/98 16:00 02/09/98

02/10/98

Results Det Limit*

< DL(U) 4.3 Carbon Tetrachloride

< DL(U) 4.3 1.2-Dichloroethane

< DL(U) 4.3 Trichloroethene < DL(U) 4.3 1,2-Dichloropropane

< DL(U) 10.7 Dibromomethane

< DL(U) 4.3 Bromoform

 $\leq DL(U)$ 4.3 Bromodichloromethane < DL(U) 30.0 1.1.2,2-Tetrachlorocthane

< DL(U) 4.3 Benzene

< DL(U)17.1 cis-1,3-Dichloropropene

< DL(U) 4.3 Toluene

< DL(U)4.3 trans-1,3-Dichloropropene < DL(U) 4.3 1,1,2-Trichloroethane

< **DL(U)** 42.6 Tetrachloroethene

< DL(U)4.3,1,3-Dichloropropane < DL(U)4.3 Dibromochloromethane

< DL(U)4.3 1.2-Dibromoethane

< DL(U)4.3 Ethylbenzene

Results Det Limit* < DL(U) 43

< DL(U) 4.3 < DL(U)4.3 < DL(U) 4.3

< DL(U) 4.3 < DL(U) 4.3

< DL(U)4.3

< DL(U) 4.3 < DL(U)8.5

< DL(U)43

< DL(U)10.7 < DL(U) 4.3

< DL(U)4.3 < DL(U)4.3

< DL(U)4.3 < DL(U)4.3 < DL(U)4.3

< DL(U) 4.3

Page 1

DL = Detection Limit

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SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

WASTE RESOURCE ASSOC. Cust

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn: MARK SCHWIPPERT

716-297-4205 Phone

FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust: ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* = *See Individual Limit Soil=ug/kg ppb

Water=ug/L ppb

B-1

SOIL

Results shown are:

Volatile Organic Analytes

Extraction Method:

EPA 5030 Purge & Trap

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB)

Sample ID#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Reported

Date Sampled Date Received Date Analyzed

02/10/98

02/04/98 02/06/98

02/09/98

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

Results Det Limit*

m&p-Xylene

o-Xylene

Styrene

Isopropylbenzene

n-Propylbenzene

1,3,5-Trimethylbenzenc

tert-Butylbenzene

1,2,4-Trimethylbenzene

sec-Butylbenzene

Chlorobenzene

1,1,1,2-Tetrachloroethane

Bromobenzene

1,2,3-Trichloropropane

2-Chlorotoluene

4-Chiorotoluene

1,3-Dichlorobenzenc

4-Isopropyltoluene

1,4-Dichlorobenzene

Results Det Limit*

MARK SCHWIPPERT

16:00

16522

< DL(U) 8.5 1,2-Dichlorobenzene < DL(U)4.3 n-Butylbenzene

< DL(U) 4.3 1,2-Dibromo-3-chloropropane < DL(U)

< DL(U) 4.3 1,2,4-Trichlorobenzene

< DL(U)4.3 Hexachlorobutadiene

< DL(U) 4.3 Naphthalene

4.3

4.3

4.3

4.3

4.3

4.3

4.3

4.3

4.3

4.3

4.3

4.3 1,2,3-Trichlorobenzene

43

< DL(U) < DL(U) 4.3 10.7 < DL(U) 8.5 < DL(U) 4.3

< DL(U) 21.3 < DL(U) 21.3

< DL(U)= analyzed but not detected

L= estimated value

B=analyte found in blank

E=exceed calibration range

* DL = Detection Limit

RESULTS WHEN YOU WANT THEM

Page 2

PO Box 40 5611 Water Street Middlesex NY 14507

Tel: (716) 554-5347

Tel: (800) THE LABS

Tel: (800) 843-5227

FAX: (716) 554-4114

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT -METHOD 624

Cust

WASTE RESOURCE ASSOC.

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

Phone

716-297-4205

FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Soil=ug/kg ppb

Results shown are:

Volatile Organic Analytes

Detection Limits* =

Extraction Method:

40 Carbon Tetrachloride

EPA 5030 Purge & Trap

*See Individual Limit

Water=ug/L ppb

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB)

Sample JD#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

	6523
B-2	
SOIL	

MARK SCHWIPPERT

02/04/98	
02/06/98	16:00
02/09/98	

02/10/98

< DIAD |

< DL(U)

Dichlorodifluoromethane

Vinyl Chloride

Chloromethane

Bromomethane

Chloroethane

Trichlorofluoromethane

1,1-Dichloroethene

Methylene Chloride

trans-1,2-Dichloroethene

Methyl-tert-butyl ether

1,1-Dichloroethane

2,2-Dichloropropane

cis-1,2-Dichloroethene

Methyl ethyl ketone

Bromochloromethane

Chloroform

1,1,1-Trichloroethane

1,1-Dichloropropene

DL = Detection Li	7	٦	ı	İ	
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Results	Det Limit*
---------	------------

- DTY(O)	4.0	Carbon retractionide
< DL(U)	4.0	1,2-Dichloroethane
< DL(U)	4.0	Trichloroethene
< DL(U)	4.0	1,2-Dichloropropane
< DL(U)	10.0	Dibromomethanc
< DL(U)	4.0	Bromoform
< DL(U)	4.0	Bromodichloromethane
< DL(U)	20.0	1,1,2,2-Tetrachloroethane
< DL(U)	4.0	Benzene
< DL(U)	16.0	cis-1,3-Dichloropropene
< DL(U)	4.0	Toluene
< DL(U)	4.0	trans-1,3-Dichloropropene
< DL(U)	4.0	1,1,2-Trichloroethane
< DL(U)	40.0	Tetrachloroethene
< DL(U)	4.0	1,3-Dichloropropane
< DL(U)	4.0	Dibromochloromethane
< DL(U)	4.0	1,2-Dibromoethane

Results	Det	Limit*
DL(U)		4.(

***************************************	2-01-2-11-11
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	8.0
< DL(U)	4.0
< DL(U)	10.0
< DL (U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0

Page 1

RESULTS WHEN YOU WANT THEM

4.0 Ethylbenzene

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SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

WASTE RESOURCE ASSOC. Cust

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

716-297-4205 Phone FAX 716-297-3767

PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* =

Soil=ug/kg ppb Water=ug/L ppb

B-2

SOIL

Results shown are:

Volatile Organic Analytes

Extraction Method:

EPA 5030 Purge & Trap

*See Individual Limit

Sample ID (LAB)

Sample ID#1(CUST) Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

Analysis Method:

EPA 624 GC/MS

į			
ı	MARK	SCHW	IPPERT
ļ			

16523

0	2	/0	4	9	8
	-				_

02/06/98 16:00 02/09/98

02/10/98

< DL(U)

< DL(U)

< DL(U)

< DL(U)

	<u> </u>	
Results	Det I imit*	

mic*	D	mark to the
mit.	Results	Det Limit*

m&p-Xylene o-Xylene

Styrene Isopropylbenzene

n-Propylbenzene

1,3,5-Trimethylbenzene

tert-Butylbenzene

1,2,4-Trimethylbenzene

sec-Butylbenzene Chlorobenzene

1,1,1,2-Tetrachloroethane

Bromobenzene

1,2,3-Trichloropropane

2-Chlorotoluene

4-Chlorotoluene

1,3-Dichlorobenzene

4-Isopropyitoluene

1,4-Dichlorobenzene

< DL(U)8.0 1.2-Dichlorobenzene < DL(U) 4.0 n-Butylbenzene

4.0 1,2-Dibromo-3-chloropropane

4.0 1.2.4-Trichlorobenzene

4.0 Hexachlorobutadiene

4.0 Naphthalene

< DL(U)	4.0
< DL(U)	10.0
< DL(U)	8.0
<dl(u)< th=""><th>4.0</th></dl(u)<>	4.0
< DL(U)	20.0
< DL(U)	20.0

4.0

< DL(U)

< DL(U)4.0 1.2,3-Trichlorobenzene < DL(U) 4.0

< DL(U) 4.0 < DL(U) 4.0

< DL(U)4.0 < DL(U)4.0

< DL(U) 4.0 < DL(U)4.0

< DL(U) 4.0 < DL(U) 4.0 < DL(U) 4.0 < DL(U) 4.0

< DL(U)= analyzed but not detected

L= estimated value

B=anulyte found in blank

E=exceed culibration range

* DL = Detection Limit

Page 2

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Tel: (800) 843-5227

FAX: (716) 554-4114

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

WASTE RESOURCE ASSOC. Cust

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

Phone

716-297-4205

FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Soil=ug/kg ppb

Results shown are:

Volatile Organic Analytes

Detection Limits* =

Extraction Method:

EPA 5030 Purge & Trap

*See Individual Limit

Water=ug/L ppb

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB)

Sample ID#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

1	6524
B-3	
SOIL	

MARK SCHWIPPERT

02/04/98	
02/06/98	16:00
02/00/08	

02/10/98

< DL(U)

Results Dichlorodifluoromethane

Vinyl Chloride

Chloromethane

Bromomethane

Chloroethane

Trichlorofluoromethane

1,1-Dichloroethene

Methylene Chloride

trans-1,2-Dichloroethene.

Methyl-tert-butyl ether

1,1-Dichloroethane

2,2-Dichloropropane

cis-1,2-Dichloroethene

Methyl ethyl ketone

Bromochloromethane

Chloroform

1,1,1-Trichloroethane

1,1-Dichloropropene

DL = Detection Limit

Det Limit

< DL(U)	4.0	Carbon Tetrachloride
< DL(U)	4.0	1,2-Dichloroethane
< DL(U)	4.0	Trichloroethene
< DL(U)	4.0	1,2-Dichloropropane
< DL(U)	10.0	Dibromomethane
< DL(U)	4.0	Bromoform
< DI (ID	4.0	Bromodiabloromethon

< DL(U) 4.0 Bromodichloromethane

< DL(U) 25.0 1,1,2,2-Tetrachloroethane < DL(U)4.0 Benzene

 $\leq DL(U)$ 16.0 cis-1,3-Dichloropropenc

< DL(U)4.0 Toluene

 $\leq DL(U)$ 4.0 trans-1.3-Dichloropropene < DL(U)4.0 1.1.2-Trichloroethane

< DL(U)40.0 Tetrachloroethene < DL(U)4.0 1.3-Dichloropropane

< DL(U)4.0 Dibromochloromethane < DL(U)4.0 1,2-Dibromoethane

4.0 Ethylbenzene

Results Det Limit*

< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0

< DL(U)4.0 < DL(U)4.0

< DL(U) 8.0

< DL(U)4.0 < DL(U)10.0

< DL(U)4.0 < DL(U) 4.0

< DL(U) 4.0 < DL(U) 4.0 < DL(U) 4.0

< DL(U) 4.0 < DL(U) 4.0

Page 1

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WASTE RESOURCE ASSOC. Cust

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

Phone FAX

716-297-4205 716-297-3767

PO Number:

Project Number 239C02

Project Cust: ROSINA FOODS

Project Site: 210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* =

Soil=ug/kg ppb

Volatile Organic Analytes

Water=ug/L ppb

Extraction Method:

Results shown are:

EPA 5030 Purge & Trap

*See Individual Limit

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB) Sample ID#1(CUST) Sample ID#2(CUST)

Matrix

Sampled By Date Sampled Date Received

Date Analyzed

Date Reported

1	6524
B-3	
COIL	
SOIL	

MARK SCHWIPPERT

02/04/98

m&p-Xylene

o-Xylenc Styrene

Isopropylbenzene

n-Propylbenzene 1,3,5-Trimethylbenzene

tert-Butylbenzene 1,2,4-Trimethylbenzene

sec-Butylbenzene Chlorobenzene

1,1,1.2-Tetrachloroethane

Bromobenzene

1,2,3-Trichloropropane

2-Chlorotoluene

4-Chlorotoluene 1,3-Dichlorobenzene

4-Isopropyltoluene

1.4-Dichlorobenzenc

02/06/98	16:00
02/09/98	

02/10/98

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

Results	Det Limit*

< DL(U)	8.0	1,2-Dichlorobenzene
< DL(U)	4.0	n-Butylbenzene
< DL(U)	4.0	1,2-Dibromo-3-chloropropan
< DL(U)	. 4.0	1,2,4-Trichlorobenzene

< DL(U) 4.0 Hexachlorobutadiene < DL(U)4.0 Naphthalene

4.0

4.0

4.0

4.0

4.0

4.0

4.0

4.0

4.0

4.0

40

< DL(U) 4.0 1,2,3-Trichlorobenzene

	< DL(U)	
ane	< DL(U)	
	< DL(U)	
	< DL(U)	
	< DL(U)	
	< DL(U)	

Results

< DL(U)

Det Limit*

4.0

4.0

10.0

8.0

4.0

20.0

20.0

< DL(U)= analyzed but not detected

L= estimated value

B=analyte found in blank

E=exceed calibration range

DL = Detection Limit

Page 2

PO Box 40 5611 Water Street Middlesex NY 14507

Tel: (716) 554-5347

Tel: (800) THE LABS

Tel: (800) 843-5227

FAX: (716) 554-4114

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

WASTE RESOURCE ASSOC.

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

Phone

716-297-4205

FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* =

Soil=ug/kg ppb

Analysis Method:

Volatile Organic Analytes

Extraction Method:

EPA 5030 Purge & Trap

*See Individual Limit Water-ug/L ppb

Sample TD (LAB)

Sample ID#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

Results shown are:

EPA 624 GC/MS

Dichlorodifluoromethane

Vinyl Chloride

Chloromethane

Bromomethane

Chloroethane

Trichlorofluoromethane

1,1-Dichloroethene

Methylene Chloride

trans-1,2-Dichloroethene

Methyl-tert-butyl ether

1,1-Dichloroethane

2,2-Dichloropropane

cis-1,2-Dichloroethene

Methyl ethyl ketone

Bromochloromethane

Chloroform

1.1.1-Trichloroethane

1,1-Dichloropropene

* DL = Detection Limit

16525	
B-4	
SOIL	

MARK SCHWIPPERT

02/04/98	
02/06/98	16:00

02/09/98

02/10/98

Results	Det Limit*	,
< DL(U)	3.9	Carbon Tetrachloride
< DL(U)	3.9	1,2-Dichloroethane
< DL(U)	3.9	Trichloroethene
< DL(U)	3.9	1,2-Dichloropropane
< DL(U)	9.8	Dibromomethane
< DL(U)	3.9	Bromoform
< DL(U)	3.9	Bromodichloromethane
< DL(U)	25.0	1,1,2,2-Tetrachloroethane
		4

DL(U)	25.0	1,1,2,2-Tetrachloroet
DL(U)	3.9	Benzene
(DIA)	157	cis-1 3-Dichlaraneone

3.9 Toluene

< DL(U)	3.9	trans-1,3-Dichloropropene
< DL(U)	3.9	1,1,2-Trichloroethane
< DL(U)	39.1	Tetrachloroethene

< DL(U) 3.9 1,3-Dichloropropane < DL(U) 3.9 Dibromochloromethane

< DL(U) 3.9 1,2-Dibromoethane < DL(U) 3.9 Ethylbenzene

Results	Det Limit*
< DL(U)	3.9
< DL(U)	3.9
66	2.0

 $\leq DL(U)$ 3.9 < DLW 3.9

< DL(U) 3.9 < DL(U) 3.9

3.9 < DL(U) < DL(U)7.8

< DL(U)3.9 < DL(U) 9.8

< DL(U) 3.9 < DL(U) 3.9

18.3 3.9 < DL(U) 39 < DL(U)

3.9 < DL(U)3.9 < DL(0)3.9

Page 1

EXPRESSLAR

PO Roy 40 5611 Water Street Middlesex NY 14507

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SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

WASTE RESOURCE ASSOC. Cust

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

Phone

716-297-4205

FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* = *See Individual Limit Soil=ug/kg ppb Water-ug/L ppb

Results shown are:

Volatile Organic Analytes

Extraction Method:

EPA 5030 Purge & Trap

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB)

Sample ID#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

16525		
B-4		
SOIL		

MARK SCHWIPPERT

02/04/98

02/06/98

16:00 02/09/98

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

< DL(U)

m&p-Xylene

o-Xylene

Styrene

Isopropylbenzene

n-Propylbenzene

1,3,5-Trimethylbenzene

tert-Butylbenzene

1,2,4-Trimethylbenzene

sec-Butylbenzene

Chlorobenzene

1,1,1,2-Tetrachloroethane

Bromobenzene

1,2,3-Trichloropropane

2-Chlorotoluene

4-Chlorotoluene

1,3-Dichlorobenzene

4-Isopropyltoluene

1,4-Dichlorobenzene

02/10/98	

Results	Det Limit*	
DL(U)	7.8 1,2-Dichlorobenzene	

< DL(U) 3.9 n-Butylbenzene

< DL(U)3.9 1,2-Dibromo-3-chloropropan < DL(U) 3.9 1.2.4-Trichlorobenzene

< DL(U) 3.9 Hexachlorobutadiene

< DL(U) 3.9 1.2,3-Trichlorobenzene

3.9

3.9

3.9

3.9

3.9

3.9

3.9

3.9

3.9

3.9

< DL(U) 3.9 Naphthalene < DL(U)

	< DL(U)	3.9
c	< DL(U)	9.8
	< DL(U)	7.8
	< DL(U)	3.9
	< DL(U)	19.6
	< DL(U)	19.6

Det Limit*

Results

< DL(U)

< DL(U)= analyzed but not detected

L- estimated value

B=analyte found in blank

E=exceed calibration range

DL = Detection Limit

Page 2

PO Rox 40 5611 Water Street Middlesex NY 14507

Tel: (716) 554-5347

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SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

WASTE RESOURCE ASSOC. Cust

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

Phone 716-297-4205 FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* =

Soil=ug/kg ppb

Results shown are:

Volatile Organic Analytes

Extraction Method:

EPA 5030 Purge & Trap

Results

Det Limit*

*See Individual Limit

Water-ug/L ppb

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB) Sample ID#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

10520	
B-5	
SOIL	
34 1 22 12 87	OTTE VIDE

T

02/06/98	16:00
02/09/98	
02/10/98	
Results	Det Limit*

Dichlorodifluoromethane

Vinyl Chloride

Chloromethane

Bromomethane

Chloroethane

Trichlorofluoromethane

1,1-Dichloroethene

Methylene Chloride

trans-1,2-Dichloroethene

Methyl-tert-butyl ether

1,1-Dichloroethane

2,2-Dichloropropane

cis-1,2-Dichloroethene

Methyl ethyl ketone

Bromochloromethane

Chloroform

1.1.1-Trichloroethane

1,1-Dichloropropene

* DL = Detection Limit

MARK SC	HWIPPE	F
02/04/98		
02/06/98	16:00	
02/09/98		
02/10/98		

< DL(U)	4.0	Carbon Tetrachloride
< DL(U)	4.0	1,2-Dichloroethane
< DL(U)	4.0	Trichloroethene
< DL(U)	4.0	1,2-Dichloropropane
< DL(U)	10.0	Dibromomethane
< DL(U)	4.0	Bromoform

< DL(U) 4.0 Bromodichloromethane < DL(U) 20.0 1,1,2,2-Tetrachloroethane < DL(U) 4.0 Benzene

< DL(U) 16.0 cis-1,3-Dichloropropene

< DL(U) 4.0 Toluene

< DL(U) 4.0 trans-1,3-Dichloropropene < DL(U) 4.0 1,1,2-Trichloroethane

< DL(U) 40.0 Tetrachloroethene < DL(U) 4.0 1,3-Dichloropropane

< DL(U) 4.0 Dibromochloromethane < DL(U) 4.0 1,2-Dibromoethane < DL(U) 4.0 Ethylbenzene

14004160	Det Limit
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	8.0
< DL(U)	4.0
< DL(U)	10.0
< DL(U)	4.0
< DL(U)	4,0
< DL(U)	4.0

Page 1

PO Box 40 5611 Water Street Middlesex NY 14507

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SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

WASTE RESOURCE ASSOC. Cust

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

Attn:

MARK SCHWIPPERT

Phone

716-297-4205

FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* =

Soil=ug/kg ppb

Results shown are:

Volatile Organic Analytes

Extraction Method:

EPA 5030 Purge & Trap

*See Individual Limit

Water=ug/L ppb

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB) Sample ID#1(CUST) Sample ID#2(CUST)

Matrix Sampled By Date Sampled Date Received Date Analyzed

Date Reported

165	26
B-5	
SOIL	

MARK SCHWIPPERT

02/04/98 02/06/98 16:00 02/09/98 02/10/98

m&p-Xylene

o-Xylene Styrene

Isopropylbenzene n-Propyibenzene 1,3,5-Trimethylbenzene

tert-Butylbenzene 1,2,4-Trimethylbenzene

sec-Butylbenzene Chlorobenzene

1,1,1,2-Tetrachloroethane

Bromobenzene

1,2,3-Trichloropropane

2-Chlorotoluene 4-Chlorotoluene

1,3-Dichlorobenzene

4-Isopropyltoluene 1,4-Dichlorobenzene Results Det Limit

< DL(U) < DL(U)< DL(U)< DL(U) < DL(U) < DL(U) 4.0 1,2,3-Trichlorobenzene

< DL(U) $\leq \overline{DL(U)}$ 4.0 < DL(U)4.0 < DL(U) 4.0

< DL(U)4.0 < DL(U) 4.0 < DL(U)4.0 < DL(U) 4.0 < DL(U) 4.0

< DL(U) 4.0 < DL(U) 4.0 < DL(U) 4.0

8.0 1,2-Dichlorobenzene

4.0 n-Butylbenzene 4.0 1,2-Dibromo-3-chloropropane < DL(U)

4.0 1,2,4-Trichlorobenzene 4.0 Hexachlorobutadiene

4.0 Naphthalene

< DL(U) 4.0 < DL(U) 4.0 10.0 8.0

Results

Det Limit*

< DL(U) < DL(U) 4.0 < DL(U) 20.0 < DL(U) 20.0

< DL(U)= analyzed but not detected

L= estimated value

B=analyte found in blank E=exceed calibration range

DL = Detection Limit

Page 2

PO Box 40 5611 Water Street Middlesex NY 14507

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Tel: (800) 843-5227

FAX: (716) 554-4114

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

Cust WASTE RESOURCE ASSOC.

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

MARK SCHWIPPERT Attn:

Phone 716-297-4205 FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust:

ROSINA FOODS

Project Site:

210 FRENCH ROAD

Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* = *See Individual Limit

Soil=ug/kg ppb

Water=ug/L ppb

B-6

Results shown are:

Volatile Organic Analytes

Extraction Method:

EPA 5030 Purge & Trap

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB)

Sample ID#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

Vinyl Chloride Chloromethane Bromomethane Chloroethane

Dichlorodifluoromethane

Trichlorofluoromethane

1,1-Dichloroethene

SOIL		
MARK SO	CHWIPPE	RT

16527

02/04/98

02/06/98 16:00

02/09/98 02/10/98

Results	Det	Limit*

< pr(n)	4.0	Carbon Tetrachloride
< DL(U)	4.0	1,2-Dichloroethane
< DL(U)	4.0	Trichloroethene
< DL(U)	4.0	1,2-Dichloropropane
< DL(U)	10.0	Dibromomethane

< DL(U) 4.0 Bromoform < DL(U) 4.0 Bromodichloromethane

Methylene Chloride < DL(U) 16.0 1,1,2,2-Tetrachloroethane trans-1,2-Dichloroethene < DL(U) 4.0 Benzene

Mcthyl-tert-butyl ether 16.0 cis-1,3-Dichloropropene < DL(U)

1,1-Dichloroethane < DL(U) 4.0 Toluene

2,2-Dichloropropane < DL(U) 4.0 trans-1,3-Dichloropropene cis-1,2-Dichloroethene < DL(U)4.0 1,1,2-Trichloroethane

Methyl ethyl ketone < DL(U) 40.0 Tetrachloroethene

Bromochloromethane < DL(U) 4.0 1,3-Dichloropropane Chloroform < DL(U)4.0 Dibromochloromethane

1,1,I-Trichloroethane < DL(U) 4.0 1,2-Dibromoethane 1,1-Dichloropropene < DL(U) 4.0 Ethylbenzene

DL = Detection Limit

Results	Det Limit*
< DLAD	4.0

< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	8.0.
< DL(U)	4.0.
< DL(U)	10.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< D L(U)	4.0
< DL(U)	4.0
< DL(U)	4.0
< DL(U)	4.0

Page 1

PO Box 40 5611 Water Street Middlesex NY 14507

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SPECIALIZING IN ENVIRONMENTAL SOIL TESTS NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 624

Cust WASTE RESOURCE ASSOC.

Address 2576 SENECA AVE.

NIAGARA FALLS, NY 14305

MARK SCHWIPPERT Attn:

Phone 716-297-4205 FAX 716-297-3767 PO Number:

Project Number 239C02

Project Cust: **ROSINA FOODS** 210 FRENCH ROAD

Project Site: Date FAXED:

Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print

Detection Limits* =

Soil=ug/kg ppb

Extraction Method:

Volatile Organic Analytes

*See Individual Limit

Water=ug/L ppb

Results shown are:

EPA 5030 Purge & Trap

Analysis Method:

EPA 624 GC/MS

Sample ID (LAB)

Sample ID#1(CUST)

Sample ID#2(CUST)

Matrix

Sampled By

Date Sampled

Date Received

Date Analyzed

Date Reported

02/10/98

m&p-Xylene

o-Xylene

Styrene

Isopropylbenzene

n-Propylbenzene

1,3,5-Trimethylbenzene

tert-Butylbenzene

1,2,4-Trimethylbenzene

sec-Butylbenzene

Chlorobenzene

1.1.1.2-Tetrachloroethane

Bromobenzene

1,2,3-Trichloropropane

2-Chlorotoluene

4-Chlorotoluene

1,3-Dichlorobenzene

4-Isopropyltolucne

1,4-Dichlorobenzene

16527 B-6

SOIL

MARK SCHWIPPERT

02/04/98

02/06/98 16:00

02/09/98

Results Det Limit

< DL(U) 8.0 1,2-Dichlorobenzene

< DL(U) 4.0 n-Butylbenzene

< DL(U) 4.0 1,2-Dibromo-3-chloropropane < DL(U)

< DL(U)4.0 1.2.4-Trichlorobenzene

< DL(U) 4.0 Hexachlorobutadiene

< DL(U) 4.0 Naphthalene

< DL(U)

< DL(U) 6.0 < DL(U) 4.0

< DL(U) 4.0 4.0

< DL(U)< DL(U) 4.0

< DL(U) 4.0 < DL(U) 4.0

< DL(U) 4.0 < DL(U) 4.0 < DL(U) 4.0

< DL(U) 4.0

Results Det Limit*

< DL(U) 4.0 < DL(U) 4.0 10.0 < DL(U) 8.0 < DL(U) 4.0

20.0

20.0

< DL(U)

< DL(U)

4.0 1,2,3-Trichlorobenzene

< DL(U)= analyzed but not detected

L= estimated value

B=analyte found in blank

E=exceed calibration range

16522 16523 16524 16525

16526

16527 MANULA

WUKKUKUER 1313

NY STATE CERTIFIED LAB #11369

3 days Due 2-
PO NUMBER: PROJECT NO.: 239 C 02 PROJECT CUST.: ROSINA FO 005 PROJECT SITE: 210 F RENCH ROMA
SEND RESULTS: TAX EXPR MAIL PHONE RESULTS: YES NO

CUSTOMER: WASTE RESOURCE ASSOCIATES
ADDRESS: 2576 SENECA RIVENUE
CITY: NINGARA FALLS
STATE/ZIP: NV 14305
PHONE: 716 297 4205
FAX: 716 297 3767
CONTACT: MARK SCHWIPPERT

SAMPLE DEMOGRAPHICS AND TESTS REQUIRED

8021 + MTBE	8020 BTEX + M	TDE	8270 (Stars)	FULL TOLP		LIST AN	ALYSIS REQUIRED
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	8021 + MTBL		625	TCLP LESS HERE	IS & PESTS		
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	503.1		PCB's	TCLP VOLATILE	S		7 7 7 7 7
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	TPH GASOLINE	•	602	TCLP SEMI-VOLA	ATILES	/ 3/	_ / / / / / / / / / / / / / / / / / / /
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	TPH DIESEL.	_	624	8 RCRA METALS	(TCLP)	/ 6./	
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	8240		TOX	HERBICIDES		/ 2/	
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	8260 (Stars)		LEAD ONL	Y PESTICIDES		/ \$/	//////////////////////////////////////
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	8260					/ 23/	/ / / / / /
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5		S (DIRE	ECT')		(DIESEL)	/ 3/	/ / / / / /
2/4/98 9A B-1 501L 10 A B-2 11 1/ A B-3 11 12 " 5 P B-4 11 13 " P B-5					•	\@ @\	/ / / / / /
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5					SUSPECT:	132/	
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	SDECIAL IN	CTDII	CTIONS E	PA 8010 - HALOGE		\@\\$\ \	/ / / /
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5	or increase in	SILLO	C 110/(0. <u>-</u>	YOU STILE	DOGGUICS	12.50	/ / / /
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5				POLITICE	DROTA TES	(8 8)	
2/4/98 9A B-1 501L - 10A B-2 - 11A B-3 - 12°5 P B-4 - 13° P B-5						\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
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" 750 P R-6					`	١٨٨	
	" 250	P	8-6.	V			

CHAIN OF CUSTODY RECORD

White-Lab, Yellow-Customer, Hard-Lah

Exhibit 5

General Earthwork Specifications

GENERAL EARTHWORK SPECIFICATION

I. MATERIALS

- A. <u>Ordinary Fill</u> shall be friable soil containing no stone greater than two-thirds loose lift thickness. The material shall be essentially free of trash, ice, snow, tree stumps, roots, and organic materials.
- B. <u>Granular Fill</u> shall be free from ice and snow, roots, sod, rubbish, and other deleterious or organic matter. Granular fill shall conform to the following gradation requirements:

Sieve Size	Percent Finer by Weight <u>Granular Fill</u>		
2/3 of the loose lift thickness	100		
No. 10	30-95		
No. 40	10-70		
No. 200	0-15		

C. <u>Sand-Gravel</u> shall consist of hard, durable sand and gravel, and shall be free from ice and snow, roots, sods, rubbish, and other deleterious or organic matter. It shall conform to the following gradation requirements:

Sieve Size	Percent Finer by Weig <u>Sand-Gravel</u>		
*	100		
1/2 inch	50-85		
No. 4	40-75		
No. 10			
No. 40	10-35		
No. 100			
No. 200	0-8		

General Earthwork Specification

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D. <u>Crushed Stone</u> shall consist of durable crushed rock or durable crushed gravel stone free from ice and snow, sand clay, loam, or other deleterious material. The crushed stone shall be uniformly blended and conform to the following requirements.

	Percent Passing			
Sieve Size	<u>3/4" Stone</u>	1-1/4" Stone		
1-1/2"		100%		
1-1/4"		85-100		
1 "	100%			
3/4"	99-100	10-40		
5/8"				
1/2"	10-50	0-8		
3/8"	0-20			
#4	0-5			

II. EXCAVATING OF TOPSOIL AND OTHER UNSUITABLE MATERIAL

A. <u>General:</u> Within the site limits indicated on the drawings, the contractor shall excavate all unsuitable material to firm natural ground in the manner specified below. Unsuitable material is here classified as brown, organic topsoil and underlying soft pockets of organic or severely disturbed silt and sand.

The contractor shall follow a construction procedure which permits visual identification of firm natural ground. In the event that groundwater is encountered, the engineer may require that the size of the open excavation be limited to that which can be handled by open pumping and allow visual inspection of the bottom and backfill in the dry.

Limits of excavation are such that all unsuitable material will be removed to a distance of 5 feet beyond the building lines or within the area defined by a one horizontal to one vertical line sloping down from outside bottom edge or exterior footings to firm natural ground, whichever is greater.

The contractor shall excavate in such a manner as to minimize disturbance of the underlying natural ground. If judged necessary, the contractor will be required to alter his construction procedures to reduce subgrade disturbance. Areas which have been excessively disturbed shall be excavated to firm ground and backfilled with properly compacted granular fill.

General Earthwork Specifications

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- B. <u>Disturbed Subgrade:</u> If requested by the engineer, the contractor shall be required to place a 6" to 12" layer of sand and gravel or crushed stone over the natural underlying soil to stabilize areas which may become disturbed due to groundwater seepage pressures and to expedite pumping. Particular areas of concern are beneath foundations.
- C. <u>Proofrolling:</u> Prior to placement of the initial layer of fill over the natural ground, proof the exposed natural ground above the groundwater table elevation by making two (2) passes with a fully loaded 10-wheel truck. Any unstable area detected shall be excavated and replaced with compacted granular fill.

III. PLACEMENT AND COMPACTION OF FILL

A. <u>Requirements:</u> Allow the engineer sufficient time to make necessary observations and tests. The degree of compaction shall be based on a maximum dry density as determined by ASTM test D1557. The degree of compaction for fill placed in various areas shall be as follows:

	. <u>Areas</u>	Minimum Degree of compaction
1.	Below foundation.	95%
2.	Pavement and building subbase and base	
	courses.	95%
3.	Below building slab base course and	
	above bottom of foundation.	92%
4.	Below pavement subbase and base courses.	90%
5.	Trench backfill outside of building area.	90%
6.	Trench backfill inside of building shall	
	be compacted to the degree stated for the	
	areas above.	
7.	Ordinary fill within five feet of grade.	90%
8.	In grass areas below five feet from grade.	85%

General Earthwork Specifications

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Fill used within building area shall meet or exceed the requirements or granular fill state above.

B. <u>Methods:</u> The compaction alternatives given below are stated to provide minimum compaction standards only and in no way relieve the contractor of his obligation to achieve the above specified degree of compaction by whatever additional effort is necessary. Place fill in accordance with the criteria given below:

Compaction Method	Maximum Stone Size	Maximum Loose Lift Thickness		Minimum No of Passes	
		Below Structure and Pavements	Less Critical Areas	Below Structures and Pavements	Less Critical Areas
Hand operated vibratory plate or light roller in confined areas	3	4 "	<u>4</u> "	4	4
Hand operated vibratory drum rollers weighing at least 1000# in confined areas	4	6 "	8 "	4	4
Loaded 10-wheel truck or D-8 crawler	6	10"	12"	4	2
Light vibratory drum roller min. wgt. at drum 8000# min. dynamic force 10000#	8	12"	12"	6	2
Medium vibratory drum min. wgt. at drum 10000#, min. dynamic force 2000#	8	18"	18"	6	4

General Earthwork Specification

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- 1. Protect fill area by grading to drain and providing a smooth surface which will readily shed water. Grade the surface of the areas in such a manner as to prevent ponding of surface run-of water in areas to receive compacted fill.
- 2. To the extent that it is practicable, each layer of fill shall be compacted to the specified density the same day it is placed.
- 3. Fill that is too wet for proper compaction shall be disced, harrowed, or otherwise dried to proper moisture density content for compaction to the required density.
- 4. Fill that is too dry for proper compaction shall receive water uniformly applied over the surface of the loose layer. Sufficient water shall be added to allow compaction to the required density.
- 5. Fill shall be placed in horizontal layers. Where the horizontal layers meet a natural rising slope, the layer shall be keyed into the slope by cutting a bench.

IV. <u>DEWATERING</u>

The contractor shall provide adequate pumping and drainage facilities to keep the excavated area sufficiently dry from groundwater and/or surface run-off so as not to adversely affect construction procedures or cause excessive disturbance or underlying natural ground. The drainage of all water resulting from pumping shall be arranged so as not to cause damage to adjacent property.

General Earthwork Specification

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V. TESTING

- A. The owner shall retain a soil engineer to perform on-site observations and testing during this phase of the construction operations. The services of the soil engineer shall include, but not be limited to, the following:
- 1. Observation during excavation and dewatering of building and controlled fill areas.
- 2. Observation during backfilling and compacting operations within that area defined as building area or controlled fill area.
- 3. Laboratory testing and analysis of fill material specified as required.
- 4. The soil engineer will observe construction and perform water content, gradation, and compaction tests at a frequency and at locations which he shall select. The results of these tests will be submitted to the Owner, copy to the Contractor, on a timely basis so that the Contractor can take such action as is required to remedy indicated deficiencies. During the course of construction, the soil engineer will advise the Owner in writing with copy to the Contractor if at any time in his opinion the work is not in conformity to the plans and specifications.
- 5. The soil engineer presence does not include supervision or direction of the actual work by the contractor, his employee or agents. Neither the presence of the soil engineer, nor any observations and testing performed by him shall excuse the contractor from defects discovered in his work.