



AGENDA

NORTH MIAMI CITY COUNCIL

REGULAR MEETING

TUESDAY, OCTOBER 22, 2013
7:00 P.M.

* * * *

TAB J

- ◆ DISCUSSION REGARDING INDEPENDENT REVIEW OF THE SOIL REUSE PLAN AT BISCAYNE LANDING

Sponsored by: City Administration



Prepared for

CITY OF NORTH MIAMI

776 NW 125th Street
North Miami, Florida 33161

DRAFT

SOIL SAMPLING SUMMARY REPORT

Biscayne Landing

Biscayne Boulevard and NW 151st Street
North Miami, FL 33161



Prepared by

Westhorp
& ASSOCIATES, INC.

8101 Biscayne Boulevard, Suite 307
Miami, Florida 33138

October 2013



**Soil Sampling Report
Biscayne Landing
North Miami, Florida**

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Independent Review of Soil Reuse Plan at Biscayne Landing

Introduction

Westhorp & Associates, Inc. (WA) is pleased to provide this draft report to the City of North Miami (City). At the City's request, WA is providing this independent review of the Oleta Partners, LLC. (Developer) plan to reuse stockpiled soil at the Biscayne Landing property (Site) located in the vicinity of Biscayne Boulevard and NE 151st Street in North Miami, Florida.

The soil stockpiles were brought onto the site by the Developer to use as backfill material in several on-site lakes. This material was generated from construction activities at the Brickell Citi Center construction site located at 701 South Miami Avenue. Initial testing showed that the soil was suitable for reuse; however further testing indicated that the material contained concentrations of leachable aluminum above the Miami-Dade County cleanup target levels. Aluminum was the only constituent of concern.

This report is an independent study of the proposed reuse for the existing stockpiled material on the Site.

Scope of Work

Our work included the following:

- Review of the existing information and the related regulatory correspondence.
- Collection of ten (10) soil samples from six suspect soil piles located onsite.
- Submittal of the soil samples to a NELAC-certified analytical laboratory for the analysis of total aluminum and synthetic precipitation leaching procedure (SPLP) for aluminum.
- Compared the laboratory results to the applicable Miami-Dade County soil and water cleanup target levels (CTLs).
- Prepared a soil sampling summary report which will include:
 - A description of the field activities;
 - Laboratory analytical reports from the soil sampling;
 - Summary tables of soil sampling results;
 - Site map(s) with soil sampling locations and results as applicable;
 - An assessment as to the appropriateness of the material for the intended use.

Background

The stockpiled soil was brought onsite from the Brickell Citi Center Construction site located at 701 South Miami Avenue. The material consists of approximately 70 percent native material and 30 percent cement grout mixture. The cement grout mixture was used to stabilize the material at the Brickell Citi Center location prior to excavation. According to correspondence between the Environmental Resources Management Division (EMRD) of the Department of

Regulatory and Economic Resources (RER) and the Developer, the cement grout mixture consists of approximately 8.6 percent slag cement. Slag cement is also called ground granulated blast furnace slag. According to the Slag Cement Association, it is hydraulic cement produced during the reduction of iron ore to iron in a blast furnace. The Material Safety Data Sheet (MSDS) that was provided for this particular product says that major ingredient is a glassy calcium silicate.

The soil was initially approved by RER for lakefilling at the Biscayne Landing Site on February 5, 2013 via email and in a March 11, 2013 letter. Based on additional information provided to RER, the March 11, 2013 approval letter was rescinded and further soil characterization was required.

Five composite soil samples collected in June 2013 by RER indicated that the extracts from the SPLP test for aluminum contained concentrations in exceedance of the groundwater and surface water cleanup target levels pursuant to Section 24-44(2) of the Miami-Dade County Code of Ordinances. However, because the site has an active groundwater remediation system, the Environmental Resources Management Division (EMRD) of the Department of Regulatory and Economic Resources (RER) has recommended that the Developer be allowed to reuse the soil as requested. Furthermore, the County's Environmental Quality Control Board (EQCB) approved the soil reuse plan on September 12, 2013.

The SPLP test is designed to determine the mobility of analytes present in liquids, soils and wastes. A specific volume of extraction fluid is added to the weight of the solid to be analyzed (20 times the weight of the solid). For a soil, the extraction fluid is a function of the region of the country where the sample site is located. The extraction fluid for regions east of the Mississippi is a sulfuric acid/nitric acid mixture (60/40 weight percent) with a pH of 4.20+/- 0.05. The soil is mixed with the extraction fluid and agitated for 18 hours (+/- 2 hours). The liquid is then filtered and the solids are discarded. The resulting extract is then analyzed.

Sampling and Analysis Results

The laboratory analytical results indicated that all 10 soil samples were below all applicable soil cleanup target levels (SCTLs) for aluminum. However, when the SPLP test was run, all 10 samples exceeded the applicable water CTLs. These are summarized in Table 2 of the Sampling Summary Report.

Health Effects of Aluminum

According to the [Agency for Toxic Substances and Disease Registry](#), aluminum is the most common abundant metal in the earth's crust. It is always found combined with other elements such as oxygen, silicon and fluorine. Furthermore, most aluminum-containing compounds do

not dissolve to a large extent in water unless the water is acidic or very alkaline. Aluminum compounds are used for many different things such as in water treatment, abrasives, antacids, astringents, buffered aspirin, food additives, cosmetics and antiperspirants. Virtually all food, water, air and soil contain some aluminum.

Exposure to aluminum is generally not harmful. However, exposure to high levels can affect health. For example, workers who breathe a large amount of aluminum dust or aluminum fumes can have lung problems and decreased performance in some tests that measure functions of the nervous system. Some studies have shown that people exposed to high levels of aluminum can develop Alzheimer's disease while others do not confirm this. We do not know whether aluminum causes Alzheimer's disease. Aluminum has not been shown to cause cancer in animals.

The Environmental Protection Agency (EPA) has a recommended Secondary Maximum Contaminant Level (SMCL) of 50-200 micrograms per liter ($\mu\text{g}/\text{L}$) for aluminum in drinking water. The Florida Department of Environmental Protection (FDEP) has also set a Secondary Drinking Water Standard (SDWS) for aluminum of 200 $\mu\text{g}/\text{L}$. This level is based on taste, smell or color, not on levels that will affect humans or animals. In other words, no adverse health effects are generally associated with the Secondary Drinking Water Standards.

Conclusions

Based on information summarized above, aluminum does not appear to pose a significant threat to human health unless large amounts of aluminum dust are inhaled. Furthermore, this soil had acceptable levels of aluminum until subject to the acidic conditions (below pH 7) reflective of the SPLP test. The soils in Miami-Dade County contain large amounts of calcium carbonate limestone which tend to have pH values in the range of 7.4 to 8.4. Therefore, it is our opinion, that the actual amounts of aluminum that do leach out of the backfilled soil material may be lower than indicated by the SPLP test.

In addition, based on this site's historical use as a landfill, groundwater drinking water wells are not permitted. The site also has an active groundwater remediation system which, if properly functioning, will prevent offsite discharge of any potential groundwater contamination. As an added precaution, we recommend that signs be posted by the lakes that state no fishing and no drinking of the lake water is permitted.

In summary, it is our opinion that the benefits of the proposed soil reuse plan outweigh any potential negative risks.

**Soil Sampling Report
Biscayne Landing
North Miami, Florida**

1.0 INTRODUCTION

Westhorp & Associates, Inc. (WA) is pleased to provide this draft report to the City of North Miami (City). At the City's request, WA is providing this independent review of the Oleta Partners, LLC. (Developer) plan to reuse stockpiled soil at the Biscayne Landing property (Site) located in the vicinity of Biscayne Boulevard and NE 151st Street in North Miami, Florida.

The soil stockpiles were brought onto the site by the Developer to use as backfill material in several on-site lakes. This material was generated from construction activities at the Brickell Citi Center construction site located at 701 South Miami Avenue. Initial testing showed that the soil was suitable for reuse; however further testing indicated that the material contained concentrations of leachable aluminum above the Miami-Dade County cleanup target levels. Aluminum was the only constituent of concern.

2.0 BACKGROUND INFORMATION

The stockpiled soil material was brought onsite from is from the Brickell Citi Center Construction site located at 701 South Miami Avenue. The material consists of approximately 70 percent native material and 30 percent cement grout mixture. The cement grout mixture was used to stabilize the material at the Brickell Citi Center location prior to excavation. According to correspondence between the Environmental Resources Management Division (EMRD) of the Department of Regulatory and Economic Resources (RER) and the Developer, the cement grout mixture consists of approximately 8.6 percent slag cement. Slag cement is also called ground granulated blast furnace slag. According to the Slag Cement Association, it is hydraulic cement produced during the reduction of iron ore to iron in a blast furnace. The Material Safety Data Sheet (MSDS) that was provided for this particular product says that major ingredient is a glassy calcium silicate.

3.0 FIELD ACTIVITIES

Sampling procedures performed by WA personnel were conducted in accordance with the Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOPs). On October 8 and 9, 2013, WA collected 10 soil composite samples from six stockpiles of limestone cuttings located within the Site. WA personnel were escorted by Mr. Thomas Positano of the City and personnel from SCS ES Consultants (SCS). SCS collected split samples from the soil collected by Westhorp.

Composite samples were collected by hand at the locations shown in **Figure 2**. Soil samples were collected by hand using a field-decontaminated steel hand-auger and an iron digging bar in the 18 to 24-inch interval below land surface (bls). Samples were collected at two locations on the top or sides of each stockpile for each sample in order to get a composite representation. One composite sample was collected from each stockpile numbered 14 and 15. Stockpiles numbered 1, 4, 6, and 20 were split in half in the field and two composite samples were collected from each designated north (N) and south (S).

4.0 ANALYTICAL RESULTS SUMMARY

The soil samples submitted to Florida Spectrum Environmental Services, Inc. following the National Environmental Laboratory Accreditation Conference Standard. The soil samples were analyzed for aluminum by EPA Method 6010. Results were compared to the Miami-Dade County Chapter 24 Soil Cleanup Target Levels (SCTLs). A summary of the results is included as **Table 1**.

The laboratory analytical results indicated that all 10 soil samples were below all applicable soil cleanup target levels (SCTLs) for aluminum. SPLP tests for aluminum were run on each soil sample and the results indicated that all 10 samples were above the applicable water cleanup target levels. SPLP concentrations for aluminum ranged from 4,630 micrograms per liter ($\mu\text{g/L}$) to 8,240 $\mu\text{g/L}$. The groundwater CTL for aluminum is 200 $\mu\text{g/L}$ and the surface water CTL is 13 $\mu\text{g/L}$. A summary of the SPLP results is included as **Table 2**.

5.0 RECOMMENDATIONS

Aluminum does not pose a significant threat to the human health unless exposed to acidic conditions reflective of the SPLP test. The soils in Miami-Dade County contain large amounts of calcium carbonate limestone which tend to have pH values in the range of 7.4 to 8.4. Therefore, it is our opinion, that the actual amounts of aluminum that do leach out of the backfilled soil material may be lower than indicated by the SPLP test.

FIGURES

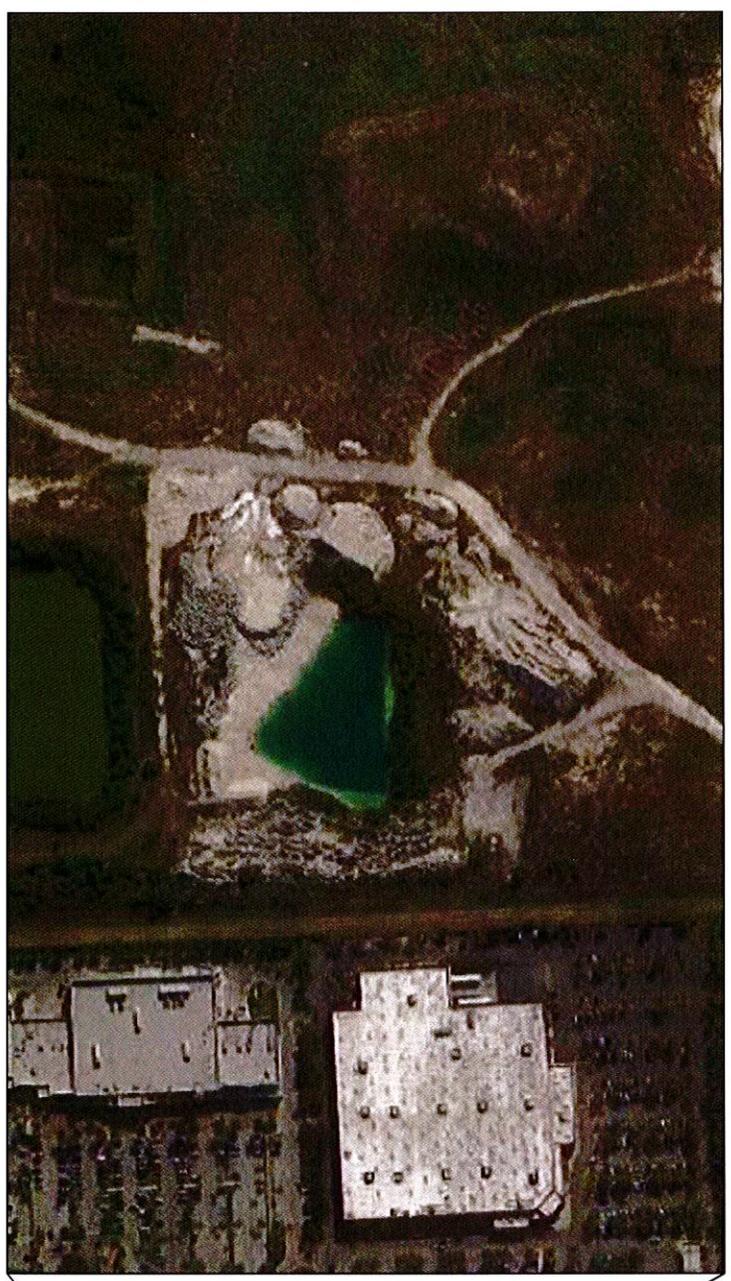


PROPERTY AREA MAP

0 1 MI 2 MI

SCALE: 1" = 1 MILE

NOTE: THIS LINE IS 2" LONG WHEN PRINTED TO SCALE



PROPERTY LOCATION

0 200' 400'

SCALE: 1" = 200'

NOTE: THIS LINE IS 2" LONG WHEN PRINTED TO SCALE

LEGEND



SUBJECT PROPERTY



PROPERTY LOCATION MAP

BISCAYNE LANDING - MIAMI, FL 33181

FIGURE 1

(10-2013)

TABLES

Table 1: Soil Sampling Analytical Results
 Biscayne Landings
 Soil Reuse Analysis

ANALYTICAL PARAMETER		ALUMINUM
UNITS		mg/kg
CLEANUP TARGET LEVELS		
DE RESIDENTIAL CTL		80,000
DE COMMERCIAL/INDUSTRIAL CTL		*
LEACHABILITY BASED ON GROUNDWATER		***
Sample ID	Date Sampled	Results
CNM-6N-10-13	10/8/2013	6,661
CNM-6S-10-13	10/8/2013	8,406
CNM-4N-10-13	10/8/2013	8,060
CNM-4S-10-13	10/8/2013	7,777
CNM-20N-10-13	10/9/2013	7,254
CNM-20S-10-13	10/9/2013	6,735
CNM-1S-10-13	10/9/2013	5,130
CNM-1N-10-13	10/9/2013	5,356
CNM-15-10-13	10/9/2013	6,438
CNM-14-10-13	10/9/2013	8,522

XXX - Result exceeds MDC Chapter 24-44 or Chapter 62-777, FAC Residential SCTL

XXX - Result exceeds MDC Chapter 24-44 or Chapter 62-777, FAC Commercial/Industrial SCTL

XXX - Result exceeds MDC Chapter 24-44 or Chapter 62-777, FAC Leachability SCTL

* - Contaminant is not a health concern for this exposure scenario.

*** - Leachability values may be derived using the SPLP test to calculate site-specific SCTLs or may be determined using TCLP in the event oily wastes are present.

Table 2: Soil Sampling SPLP Results
 Biscayne Landings
 Soil Reuse Analysis

ANALYTICAL PARAMETER	ALUMINUM	
UNITS	µg/L	
CLEANUP TARGET LEVELS		
GROUNDWATER CTL	200	
FRESHWATER SURFACE WATER CTL	13	
NATURAL ATTENUATION/SDWS	200	
Sample ID	Date Sampled	Results
CNM-6N-10-13	10/8/2013	7,200
CNM-6S-10-13	10/8/2013	6,950
CNM-4N-10-13	10/8/2013	6,310
CNM-4S-10-13	10/8/2013	4,630
CNM-20N-10-13	10/9/2013	8,240
CNM-20S-10-13	10/9/2013	6,320
CNM-1S-10-13	10/9/2013	7,160
CNM-1N-10-13	10/9/2013	5,860
CNM-15-10-13	10/9/2013	6,180
CNM-14-10-13	10/9/2013	6,610

- XXX** - Result exceeds Chapter 24-44 Groundwater Clean-Up Target Level
- XXX** - Result exceeds Chapter 24-44 Surface Water Clean-Up Target Level
- XXX** - Result exceeds Natural Attenuation Default Source Concentration.

APPENDIX A

Laboratory Report



Report To:
 Naila Hosein
 Westhorp & Associates, Inc.
 8101 Biscayne Blvd. Suite 307
 Miami, FL 33138

Page 1 of 10
 Report Printed: 10/14/13
 Submission # 1310000024
 Order # 51626

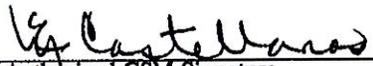
Project: CNM Biscayne Landings
 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-6N-10-13
 Collected: 10/08/13 14:00
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	74.4		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID #1					1312 SPLP Ext.	10/0917:00	10/09 17:00	EN
Aluminum	6661.29 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 18:40	MAZ
Aluminum, SPLP	7.20		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16.21	MAZ

« Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
 Analytes not currently NELAC certified denoted by ~.
 Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
 Results relate only to the sample.
 Qualifiers:
 U=Analyzed for but not detected.
 Q=Sample held beyond accepted holding time.
 I= Value is between MDL and PQL.



 Authorized CSM Signature
 Florida Environmental Certification # E86006

Florida-Spectrum Environmental Services, Inc.
 1460 W. McNab Road, Fort Lauderdale, FL 33309

Pembroke Laboratory
 528 Gooch Rd.
 Fort Meade, FL 33841

Big Lake Laboratory
 610 North Parrot Ave.
 Okeechobee, FL 34972

Spectrum Laboratories
 630 Indian St.
 Savannah, GA 31401

www.flenviro.com

All NELAP certified analyses are performed in accordance with Chapter 64E-1 Florida Administrative Code, which has been determined to be equivalent to NELAC standards. Analyses certified by programs other than NELAP are designated with a ~.

Report To:
 Naila Hosein
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 Miami, FL 33138

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 Report Printed: 10/14/13
 Submission # 1310000024
 Order # 51627

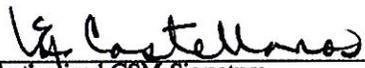
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 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-6S-10-13
 Collected: 10/08/13 14:35
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	79.3		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/0917:00	10/09 17:00	EN
Aluminum	8406.05 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 18:44	MAZ
Aluminum, SPLP	6.95		mg/L	0.001	0.003	1312/6010B	10/10	10/10 15:46	MAZ

« Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
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 Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
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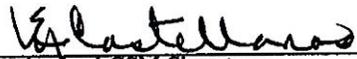
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 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-4N-10-13
 Collected: 10/08/13 15:35
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	78.1		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:46	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/0917:00	10/09 17:00	EN
Aluminum	8060.18 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 18:48	MAZ
Aluminum, SPLP	6.31		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16:00	MAZ

« Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
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Page 4 of 10
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 Order # 51629

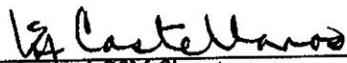
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 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-4S-10-13
 Collected: 10/08/13 16:10
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	78.1		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/09 17:00	10/09 17:00	EN
Aluminum	7777.21 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 18:53	MAZ
Aluminum, SPLP	4.63		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16:04	MAZ

« Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
 Analytes not currently NELAC certified denoted by -
 Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
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 Miami, FL 33138

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 Submission # 1310000024
 Order # 51630

Project: CNM Biscayne Landings
 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-20N-10-13
 Collected: 10/09/13 07:50
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	80.4		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/0917:00	10/09 17:00	EN
Aluminum	7253.73 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 18:57	MAZ
Aluminum, SPLP	8.24		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16:09	MAZ

* Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
 Analytes not currently NELAC certified denoted by ~
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Page 6 of 10
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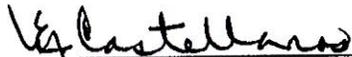
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 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-20S-10-13
 Collected: 10/09/13 08:22
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	78.5		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/0917:00	10/09 17:00	BN
Aluminum	6735.03 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 19:01	MAZ
Aluminum, SPLP	6.32		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16:13	MAZ

* Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
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Page 7 of 10
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 Submission # 1310000024
 Order # 51632

Project: CNM Biscayne Landings
 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-1S-10-13
 Collected: 10/09/13 09:00
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	76.0		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/0917:00	10/09 17:00	EN
Aluminum	5130.26 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 19:05	MAZ
Aluminum, SPLP	7.16		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16.17	MAZ

« Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DBP 62-160
 Analytes not currently NELAC certified denoted by ~.
 Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
 Results relate only to the sample.
 Qualifiers:
 U=Analyzed for but not detected.
 Q=Sample held beyond accepted holding time.
 I=Value is between MDL and PQL.



 Authorized CSM Signature
 Florida Environmental Certification # E86006

Report To:
 Naila Hosein
 Westhorp & Associates, Inc.
 8101 Biscayne Blvd. Suite 307
 Miami, FL 33138

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 Report Printed: 10/14/13
 Submission # 1310000024
 Order # 51633

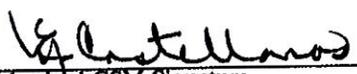
Project: CNM Biscayne Landings
 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-1N-10-13
 Collected: 10/09/13 09:35
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	77.3		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/0917:00	10/09 17:00	EN
Aluminum	5355.76 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 19:10	MAZ
Aluminum, SPLP	5.86		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16:47	MAZ

« Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
 Analytes not currently NELAC certified denoted by ~.
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 Results relate only to the sample.
 Qualifiers:
 U = Analyzed for but not detected.
 Q = Sample held beyond accepted holding time.
 I = Value is between MDL and PQL.



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 Report Printed: 10/14/13
 Submission # 1310000024
 Order # 51634

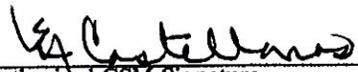
Project: CNM Biscayne Landings
 Site Location: Biscayne Blvd., North Miami, Fl.
 Matrix: Solids

Sample I.D.: CNM-15-10-13
 Collected: 10/09/13 10:30
 Received: 10/09/13 15:30
 Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	78.8		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/0917:00	10/09 17:00	EN
Aluminum	6437.82 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 19:14	MAZ
Aluminum, SPLP	6.18		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16:52	MAZ

* Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
 Analytes not currently NELAC certified denoted by ~.
 Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
 Results relate only to the sample.
 Qualifiers:
 U=Analyzed for but not detected.
 Q=Sample held beyond accepted holding time.
 I=Value is between MDL and PQL.



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Report To:
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 Report Printed: 10/14/13
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 Order # 51635

Project: CNM Biscayne Landings
Site Location: Biscayne Blvd., North Miami, Fl.
Matrix: Solids

Sample I.D.: CNM-14-10-13
Collected: 10/09/13 11:15
Received: 10/09/13 15:30
Collected by: Roger Galde

LABORATORY ANALYSIS REPORT
 All results reported as dry weight where appropriate.

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Percent Solids	75.6		%	0.1	0.3	SM2540G	10/10 08:43	10/10 14:56	MCZ
SPLP Synthetic Precipitation Leachate P	FLUID#1					1312 SPLP Ext.	10/0917:00	10/09 17:00	EN
Aluminum	8522.49 «		mg/Kg	3.6600	10.9800	3050/6010B	10/10	10/10 19:18	MAZ
Aluminum, SPLP	6.61		mg/L	0.001	0.003	1312/6010B	10/10	10/10 16:57	MAZ

« Results reported as Dry Weight ((Wet Weight / % Solids) x 100)
 QC=Qualifier Codes as defined by DEP 62-160
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 Results relate only to the sample.
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This fact sheet answers the most frequently asked health questions (FAQs) about aluminum. For more information, call the ATSDR Information Center at 1-800-232-4636. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Everyone is exposed to low levels of aluminum from food, air, water, and soil. Exposure to high levels of aluminum may result in respiratory and neurological problems. Aluminum (in compounds combined with other elements) has been found in at least 596 of the 1,699 National Priority List (NPL) sites identified by the Environmental Protection Agency (EPA).

What is aluminum?

Aluminum is the most abundant metal in the earth's crust. It is always found combined with other elements such as oxygen, silicon, and fluorine. Aluminum as the metal is obtained from aluminum-containing minerals. Small amounts of aluminum can be found dissolved in water.

Aluminum metal is light in weight and silvery-white in appearance. Aluminum is used for beverage cans, pots and pans, airplanes, siding and roofing, and foil. Aluminum is often mixed with small amounts of other metals to form aluminum alloys, which are stronger and harder.

Aluminum compounds have many different uses, for example, as alums in water-treatment and alumina in abrasives and furnace linings. They are also found in consumer products such as antacids, astringents, buffered aspirin, food additives, cosmetics, and antiperspirants.

What happens to aluminum when it enters the environment?

- Aluminum cannot be destroyed in the environment, it can only change its form.
- In the air, aluminum binds to small particles, which can stay suspended for many days.
- Under most conditions, a small amount of aluminum will dissolve in lakes, streams, and rivers.
- It can be taken up by some plants from soil.
- Aluminum is not accumulated to a significant extent in most plants or animals.

How might I be exposed to aluminum?

- Virtually all food, water, air, and soil contain some aluminum.
- The average adult in the U.S. eats about 7–9 mg aluminum per day in their food.
- Breathing higher levels of aluminum dust in workplace air.
- Living in areas where the air is dusty, where aluminum is mined or processed into aluminum metal, near certain hazardous waste sites, or where aluminum is naturally high.
- Eating substances containing high levels of aluminum (such as antacids) especially when eating or drinking citrus products at the same time.
- Children and adults may be exposed to small amounts of aluminum from vaccinations.
- Very little enters your body from aluminum cooking utensils.

How can aluminum affect my health?

Only very small amounts of aluminum that you may inhale, ingest, or have skin contact with will enter the bloodstream.

Exposure to aluminum is usually not harmful, but exposure to high levels can affect your health. Workers who breathe large amounts of aluminum dusts can have lung problems, such as coughing or abnormal chest X-rays. Some workers who breathe aluminum dusts or aluminum fumes have decreased performance in some tests that measure functions of the nervous system.

Some people with kidney disease store a lot of aluminum in their bodies and sometimes develop bone or brain diseases which

ToxFAQs™ Internet address is <http://www.atsdr.cdc.gov/toxfaq.html>

may be caused by the excess aluminum. Some studies show that people exposed to high levels of aluminum may develop Alzheimer's disease, but other studies have not found this to be true. We do not know for certain whether aluminum causes Alzheimer's disease.

Studies in animals show that the nervous system is a sensitive target of aluminum toxicity. Obvious signs of damage were not seen in animals after high oral doses of aluminum. However, the animals did not perform as well in tests that measured the strength of their grip or how much they moved around.

We do not know if aluminum will affect reproduction in people. Aluminum does not appear to affect fertility in animals.

How likely is aluminum to cause cancer?

The Department of Health and Human Services (DHHS) and the EPA have not evaluated the carcinogenic potential of aluminum in humans. Aluminum has not been shown to cause cancer in animals.

How can aluminum affect children?

Children with kidney problems who were given aluminum in their medical treatments developed bone diseases. It does not appear that children are more sensitive to aluminum than adults.

We do not know if aluminum will cause birth defects in people. Birth defects have not been seen in animals. Aluminum in large amounts has been shown to be harmful to unborn and developing animals because it can cause delays in skeletal and neurological development.

Aluminum is found in breast milk, but only a small amount of this aluminum will enter the infant's body through breastfeeding.

How can families reduce the risks of exposure to aluminum?

Since aluminum is so common and widespread in the environment, families cannot avoid exposure to aluminum.

Avoid taking large quantities of aluminum-containing antacids and buffered aspirin and take these medications as directed.

Make sure all medications have child-proof caps so children will not accidentally eat them.

Is there a medical test to determine whether I have been exposed to aluminum?

All people have small amounts of aluminum in their bodies. Aluminum can be measured in blood, bones, feces, or urine. Urine and blood aluminum measurements can tell you whether you have been exposed to larger-than-normal amounts of aluminum. Measuring bone aluminum can also indicate exposure to high levels, but this requires a bone biopsy.

Has the federal government made recommendations to protect human health?

The EPA has recommended a Secondary Maximum Contaminant Level (SMCL) of 0.05–0.2 milligrams per liter (mg/L) for aluminum in drinking water. The SMCL is not based on levels that will affect humans or animals. It is based on taste, smell, or color.

The Occupational Health and Safety Administration (OSHA) has limited workers' exposure to aluminum in dusts to 15 milligrams per cubic meter (mg/m³) (total dust) and 5 mg/m³ (respirable fraction) of air for an 8-hour workday, 40-hour workweek.

The Food and Drug Administration (FDA) has determined that aluminum used as food additives and medicinals such as antacids are generally safe.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2008. Toxicological Profile for Aluminum. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Environmental Medicine, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-800-232-4636, FAX: 770-488-4178. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html>. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

