

NM1 - __10 B__

SOIL
REUSE
APPROVAL

__Sept. 4, 2020__

Jones, Brad A., EMNRD

From: Jones, Brad A., EMNRD
Sent: Friday, September 4, 2020 10:00 AM
To: 'Mmarquez'
Subject: RE: [EXT] Request to Reuse Soils
Attachments: 2020 0904 Reuse for stabilization request approval piles 1189, 1197, 637, 1204, 718, 1127, 1179, 1205, and 1199 signed.pdf

Marcella,

Please see the attached approval letter. A hardcopy will not be placed in the mail. If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Brad

Brad A. Jones
Environmental Engineer
Environmental Bureau
NM Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505
E-mail: brad.a.jones@state.nm.us

From: Mmarquez <marcella@industrialecosystems.com>
Sent: Friday, September 4, 2020 9:33 AM
To: Jones, Brad A., EMNRD <brad.a.jones@state.nm.us>
Subject: [EXT] Request to Reuse Soils
Importance: High

Brad:

Attached please find a Request to Reuse Soils along with the corresponding laboratory report.

Please let me know if you have any questions.

Thanks,
Marcella Marquez
Phone: (505) 632-1782 ext. 202
Fax: (505) 632-1876





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State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



September 4, 2020

Ms. Marcella Marquez
JFJ Landfarm, L.L.C.
Industrial Ecosystems Inc.
P.O. Box 1202
Flora Vista, New Mexico 87415

RE: Request for Approval to Reuse Remediated Biopile Soils for the Stabilization/Solidification of Drilling Mud, Tank Bottoms, and Sludge
JFJ Landfarm, LLC - Industrial Ecosystems Inc.
JFJ Landfarm – Permit # NM1-010-B
Location: NW/4 SE/4 of Section 2, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico

Dear Ms. Marquez:

The Oil Conservation Division (OCD) has reviewed JFJ Landfarm, LLC's (JFJ) request, emailed to OCD on September 4, 2020 and associated analytical results to reuse the remediated soils for the stabilization and/or solidification of incoming drilling mud, tank bottoms, and sludge from following biopile(s): **1189, 1197, 637, 1204, 718, 1127, 1179, 1205, and 1199.**

Based upon the information provided in the request, the above-referenced biopiles are hereby approved for the stabilization and/or solidification of incoming drilling mud and tank bottoms and sludge.

Please be advised that approval of this request does not relieve JFJ of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve JFJ of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If there are any questions regarding this matter, please do not hesitate to contact me at brad.a.jones@state.nm.us.

Respectfully,

Brad Jones
Environmental Engineer

baj

Jones, Brad A., EMNRD

From: Mmarquez <marcella@industrialecosystems.com>
Sent: Friday, September 4, 2020 9:33 AM
To: Jones, Brad A., EMNRD
Subject: [EXT] Request to Reuse Soils
Attachments: 090420 Request to Reuse Soil.pdf; 090320 Lab Report.pdf

Importance: High

Brad:

Attached please find a Request to Reuse Soils along with the corresponding laboratory report.

Please let me know if you have any questions.

Thanks,
Marcella Marquez
Phone: (505) 632-1782 ext. 202
Fax: (505) 632-1876



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Main Address: 49 Road 3150 * Aztec, NM 87410
Remit to Address: P.O. Box 1202 * Flora Vista, NM 87415
P.O. Box: P.O. Box 2043 * Farmington, NM 87499
Phone: (505) 632-1782
Fax: (505) 632-1876 or (505) 334-1003

September 4, 2020

Brad Jones

Environmental Bureau
NM Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: Use of reclaimed soil

Dear Brad:

Recent analytical results show that the following biopiles(s) have reached acceptable levels as required by our NMOCD permit.

Pile #

1189 DRO, GRO, BTEX & Chlorides Passed 09/03/20
1197 DRO, GRO, BTEX & Chlorides Passed 09/03/20
637 DRO, GRO, BTEX & Chlorides Passed 09/03/20
1204 DRO, GRO, BTEX & Chlorides Passed 09/03/20
718 DRO, GRO, BTEX & Chlorides Passed 09/03/20
1127 DRO, GRO, BTEX & Chlorides Passed 09/03/20
1179 DRO, GRO, BTEX & Chlorides Passed 09/03/20
1205 DRO, GRO, BTEX & Chlorides Passed 09/03/20
1199 DRO, GRO, BTEX & Chlorides Passed 09/03/20

We are seeking NMOCD approval to recycle this soil by using it to mix/solidify incoming liquid waste.

Respectfully Submitted,

Marcella Marquez

Regulatory/Compliance/HR

Attachments/Enclosure – Analytical Reports

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

PILE #1189
H002306-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Chloride	128		16.0	mg/kg	4	0090205	GM	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	02-Sep-20	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			107 %	73.3-129		0090207	ms	02-Sep-20	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090209	MS	02-Sep-20	8015B	
DRO >C10-C28*	11.2		10.0	mg/kg	1	0090209	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane			69.1 %	44.3-144		0090209	MS	02-Sep-20	8015B	
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Surrogate: 1-Chlorooctadecane			70.1 %	42.2-156		0090209	MS	02-Sep-20	8015B	
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Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

PILE #1197
H002306-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Chloride	48.0		16.0	mg/kg	4	0090213	AC	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	02-Sep-20	8021B	

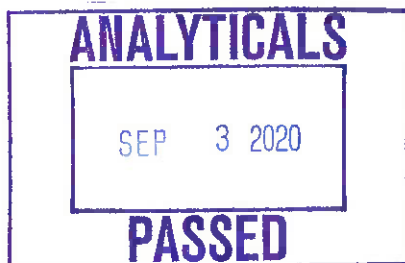
Surrogate: 4-Bromofluorobenzene (PID)	111 %	73.3-129	0090207	ms	02-Sep-20	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090209	MS	02-Sep-20	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	0090209	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane	82.2 %	44.3-144	0090209	MS	02-Sep-20	8015B
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Surrogate: 1-Chlorooctadecane	82.7 %	42.2-156	0090209	MS	02-Sep-20	8015B
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

PILE #637
H002306-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Chloride	128		16.0	mg/kg	4	0090213	AC	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	02-Sep-20	8021B	

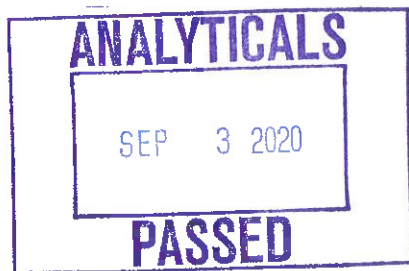
Surrogate: 4-Bromofluorobenzene (PID) 111 % 73.3-129 0090207 ms 02-Sep-20 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	QR-03
DRO >C10-C28*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane 72.8 % 44.3-144 0090210 MS 02-Sep-20 8015B

Surrogate: 1-Chlorooctadecane 74.5 % 42.2-156 0090210 MS 02-Sep-20 8015B



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Caley D. Keene, Lab Director/Quality Manager

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

PILE #1204
H002306-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	0090213	AC	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	02-Sep-20	8021B	

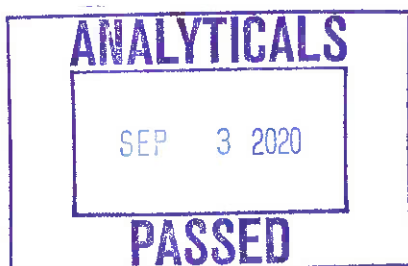
Surrogate: 4-Bromofluorobenzene (PID)			109 %	73.3-129		0090207	ms	02-Sep-20	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	
DRO >C10-C28*	19.5		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane			75.5 %	44.3-144		0090210	MS	02-Sep-20	8015B	
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Surrogate: 1-Chlorooctadecane			78.1 %	42.2-156		0090210	MS	02-Sep-20	8015B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

PILE #718
H002306-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Chloride	160		16.0	mg/kg	4	0090213	AC	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	02-Sep-20	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	111 %	73.3-129	0090207	ms	02-Sep-20	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane	74.9 %	44.3-144	0090210	MS	02-Sep-20	8015B
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Surrogate: 1-Chlorooctadecane	76.0 %	42.2-156	0090210	MS	02-Sep-20	8015B
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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

PILE #1127
H002306-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Chloride	96.0		16.0	mg/kg	4	0090213	AC	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	02-Sep-20	8021B	

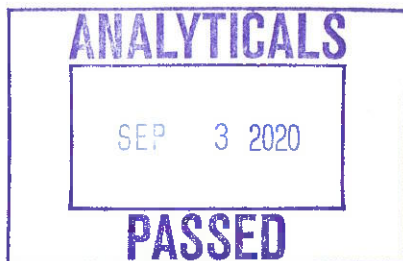
Surrogate: 4-Bromofluorobenzene (PID) 110 % 73.3-129 0090207 ms 02-Sep-20 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane 75.0 % 44.3-144 0090210 MS 02-Sep-20 8015B

Surrogate: 1-Chlorooctadecane 73.8 % 42.2-156 0090210 MS 02-Sep-20 8015B



Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

INDUSTRIAL ECOSYSTEMS
49 CR 3150
AZTEC NM, 87410

Project: JFJ
Project Number: 8119
Project Manager: MARCELLA MARQUEZ
Fax To: (505) 632-1876

Reported:
03-Sep-20 13:16

PILE #1179
H002306-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	0090213	AC	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	02-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	02-Sep-20	8021B	

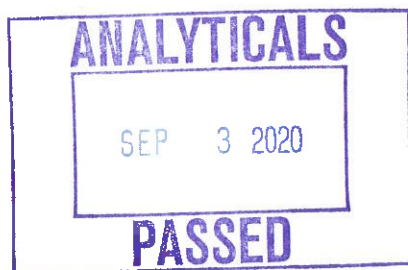
Surrogate: 4-Bromofluorobenzene (PID)			109 %	73.3-129		0090207	ms	02-Sep-20	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	
DRO >C10-C28*	14.3		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane			86.0 %	44.3-144		0090210	MS	02-Sep-20	8015B	
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Surrogate: 1-Chlorooctadecane			89.4 %	42.2-156		0090210	MS	02-Sep-20	8015B	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

PILE #1205
H002306-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Chloride	416		16.0	mg/kg	4	0090213	AC	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	03-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	03-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	03-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	03-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	03-Sep-20	8021B	

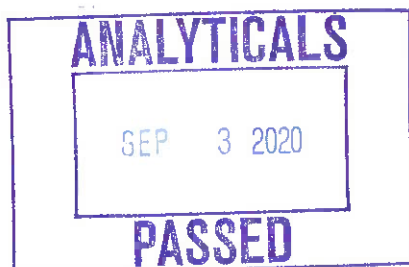
Surrogate: 4-Bromofluorobenzene (PID)		110 %	73.3-129		0090207	ms	03-Sep-20	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	
DRO >C10-C28*	21.1		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane		90.4 %	44.3-144		0090210	MS	02-Sep-20	8015B	
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Surrogate: 1-Chlorooctadecane		93.8 %	42.2-156		0090210	MS	02-Sep-20	8015B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

INDUSTRIAL ECOSYSTEMS
49 CR 3150
AZTEC NM, 87410

Project: JFJ
Project Number: 8119
Project Manager: MARCELLA MARQUEZ
Fax To: (505) 632-1876

Reported:
03-Sep-20 13:16

PILE #1199

H002306-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	64.0		16.0	mg/kg	4	0090213	AC	02-Sep-20	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	0090207	ms	03-Sep-20	8021B	
Toluene*	<0.050		0.050	mg/kg	50	0090207	ms	03-Sep-20	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	0090207	ms	03-Sep-20	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	0090207	ms	03-Sep-20	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	0090207	ms	03-Sep-20	8021B	

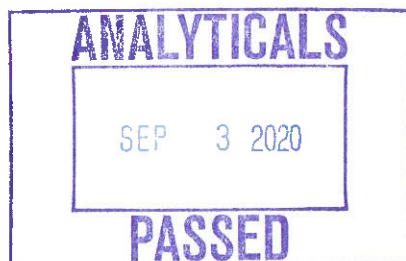
Surrogate: 4-Bromofluorobenzene (PID)			111 %	73.3-129		0090207	ms	03-Sep-20	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	
DRO >C10-C28*	50.3		10.0	mg/kg	1	0090210	MS	02-Sep-20	8015B	

Surrogate: 1-Chlorooctane			78.5 %	44.3-144		0090210	MS	02-Sep-20	8015B	
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Surrogate: 1-Chlorooctadecane			77.7 %	42.2-156		0090210	MS	02-Sep-20	8015B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

Inorganic Compounds - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0090205 - 1:4 DI Water										
Blank (0090205-BLK1)				Prepared & Analyzed: 02-Sep-20						
Chloride	ND	16.0	mg/kg							
LCS (0090205-BS1)				Prepared & Analyzed: 02-Sep-20						
Chloride	400	16.0	mg/kg	400		100	80-120			
LCS Dup (0090205-BSD1)				Prepared & Analyzed: 02-Sep-20						
Chloride	400	16.0	mg/kg	400		100	80-120	0.00	20	
Batch 0090213 - 1:4 DI Water										
Blank (0090213-BLK1)				Prepared & Analyzed: 02-Sep-20						
Chloride	ND	16.0	mg/kg							
LCS (0090213-BS1)				Prepared & Analyzed: 02-Sep-20						
Chloride	432	16.0	mg/kg	400		108	80-120			
LCS Dup (0090213-BSD1)				Prepared & Analyzed: 02-Sep-20						
Chloride	416	16.0	mg/kg	400		104	80-120	3.77	20	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

INDUSTRIAL ECOSYSTEMS
49 CR 3150
AZTEC NM, 87410

Project: JFJ
Project Number: 8119
Project Manager: MARCELLA MARQUEZ
Fax To: (505) 632-1876

Reported:
03-Sep-20 13:16

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0090207 - Volatiles

Blank (0090207-BLK1)

Prepared & Analyzed: 02-Sep-20

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0556		mg/kg	0.0500		111	73.3-129			

LCS (0090207-BS1)

Prepared & Analyzed: 02-Sep-20

Benzene	1.94	0.050	mg/kg	2.00		97.2	72.2-131			
Toluene	1.96	0.050	mg/kg	2.00		97.9	71.7-126			
Ethylbenzene	1.94	0.050	mg/kg	2.00		97.2	68.9-126			
Total Xylenes	6.06	0.150	mg/kg	6.00		101	71.4-125			
Surrogate: 4-Bromofluorobenzene (PID)	0.0516		mg/kg	0.0500		103	73.3-129			

LCS Dup (0090207-BSD1)

Prepared & Analyzed: 02-Sep-20

Benzene	2.18	0.050	mg/kg	2.00		109	72.2-131	11.7	14.6	
Toluene	2.19	0.050	mg/kg	2.00		109	71.7-126	11.1	17.4	
Ethylbenzene	2.17	0.050	mg/kg	2.00		109	68.9-126	11.2	18.9	
Total Xylenes	6.73	0.150	mg/kg	6.00		112	71.4-125	10.5	18.5	
Surrogate: 4-Bromofluorobenzene (PID)	0.0507		mg/kg	0.0500		101	73.3-129			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

INDUSTRIAL ECOSYSTEMS
49 CR 3150
AZTEC NM, 87410

Project: JFJ
Project Number: 8119
Project Manager: MARCELLA MARQUEZ
Fax To: (505) 632-1876

Reported:
03-Sep-20 13:16

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0090209 - General Prep - Organics

Blank (0090209-BLK1)

Prepared & Analyzed: 02-Sep-20

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	40.3		mg/kg	50.0		80.6	44.3-144			
Surrogate: 1-Chlorooctadecane	40.8		mg/kg	50.0		81.7	42.2-156			

LCS (0090209-BS1)

Prepared & Analyzed: 02-Sep-20

GRO C6-C10	194	10.0	mg/kg	200		96.8	78.8-127			
DRO >C10-C28	203	10.0	mg/kg	200		101	80-132			
Surrogate: 1-Chlorooctane	45.1		mg/kg	50.0		90.1	44.3-144			
Surrogate: 1-Chlorooctadecane	46.7		mg/kg	50.0		93.4	42.2-156			

LCS Dup (0090209-BSD1)

Prepared & Analyzed: 02-Sep-20

GRO C6-C10	196	10.0	mg/kg	200		98.0	78.8-127	1.21	15.1	
DRO >C10-C28	203	10.0	mg/kg	200		101	80-132	0.0513	17.1	
Surrogate: 1-Chlorooctane	42.2		mg/kg	50.0		84.4	44.3-144			
Surrogate: 1-Chlorooctadecane	43.3		mg/kg	50.0		86.5	42.2-156			

Batch 0090210 - General Prep - Organics

Blank (0090210-BLK1)

Prepared & Analyzed: 02-Sep-20

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	42.9		mg/kg	50.0		85.8	44.3-144			
Surrogate: 1-Chlorooctadecane	45.0		mg/kg	50.0		90.0	42.2-156			

LCS (0090210-BS1)

Prepared & Analyzed: 02-Sep-20

GRO C6-C10	209	10.0	mg/kg	200		104	78.8-127			
DRO >C10-C28	225	10.0	mg/kg	200		113	80-132			
Surrogate: 1-Chlorooctane	46.0		mg/kg	50.0		92.0	44.3-144			
Surrogate: 1-Chlorooctadecane	48.1		mg/kg	50.0		96.3	42.2-156			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 INDUSTRIAL ECOSYSTEMS
 49 CR 3150
 AZTEC NM, 87410

 Project: JFJ
 Project Number: 8119
 Project Manager: MARCELLA MARQUEZ
 Fax To: (505) 632-1876

 Reported:
 03-Sep-20 13:16

Petroleum Hydrocarbons by GC FID - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0090210 - General Prep - Organics
LCS Dup (0090210-BSD1)

Prepared & Analyzed: 02-Sep-20

GRO C6-C10	211	10.0	mg/kg	200		106	78.8-127	1.18	15.1	
DRO >C10-C28	221	10.0	mg/kg	200		110	80-132	2.08	17.1	
Surrogate: 1-Chlorooctane	44.1		mg/kg	50.0		88.2	44.3-144			
Surrogate: 1-Chlorooctadecane	46.9		mg/kg	50.0		93.8	42.2-156			

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Industrial Ecosystems, Inc.		P.O. #: 8119		Bill to (if different):	
Project Manager:		Company:			
Address: 49 Road 3150		Attn:			
City: Aztec		State: NM		Zip: 87410	
Phone #: 505-632-1782		Email: marcella@industrialecosystems.com			
Additional Report To:		City:			
Project Name: JFJ		State:			
Project Number:		Phone #:			
Sample Name (Print): Marcelle Marques		Fax or Email:			
FOR LAB USE ONLY		Matrix (check one)		# of containers	
		GROUNDWATER			
		SURFACEWATER			
		WASTEWATER			
		PRODUCEDWATER			
		SOIL			
		OTHER :			
		No preservation (general)			
		HNO ₃			
		HCl			
		H ₂ SO ₄			
		Other:			
		Other:			
		Other:			

Lab I.D.	Sample Name or Location	Date	Time	Collected	Matrix (check one)	# of containers	DRO (8015B)	GRO (8015B)	BTEX (8021B)	CHLORIDE (300.)
HDD2306	PILE # 1189	8/31/20	7:40	X			✓	✓	✓	✓
	PILE # 1197		8:10	X			✓	✓	✓	✓
	PILE # 637		8:25	X			✓	✓	✓	✓
	PILE # 1204		8:37	X			✓	✓	✓	✓
	PILE # 718		9:00	X			✓	✓	✓	✓
	PILE # 1127		9:12	X			✓	✓	✓	✓
	PILE # 1179		9:39	X			✓	✓	✓	✓
	PILE # 1196		9:50	X			✓	✓	✓	✓
	PILE # 1205		10:27	X			✓	✓	✓	✓
	PILE # 1195		10:47	X			✓	✓	✓	✓

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Relinquished By: M. Marques Date: 8/31/20 Time: 13:35 Received By: M. Marques Date: 8/31/20 Time: 10:55

Relinquished By: M. Marques Date: 8/31/20 Time: 10:55 Received By: M. Marques Date: 8/31/20 Time: 10:55

Delivered By: (Circle One) Sampler - UPS - FedEx - Kangaroo - Other: 1.49e113 Temperature at receipt: 68°C CHECKED BY: a

Report to State? (Circle) Yes No

ADDITIONAL REMARKS:

* Chain of Custody must be signed in "Relinquished By" as an acceptance of services and all applicable charges.