

AWES, LLC
Fort Collins, Colorado, USA

March 26, 2012

Varra Companies
8120 Gage Street
Frederick, Colorado 80516
Attn: Mr. Garrett Varra

Subject: Hazardous Materials Certification
Great Western Sugar Mine
Greeley, Colorado
AWES No. 1-1-100aa

Dear Mr. Varra:

As requested, AWES, LLC (AWES) made an evaluation as to the hazardous material characteristics of in-situ sand and gravel deposits in tract B of your mining operations. The materials will be excavated from open cut gravel extraction operations. The site was inspected on January 30, 2012. Our evaluation indicates the deposits do not contain hazardous wastes or exhibit the characteristics of hazardous waste in accordance with 40 CFR Part 261, subparts C and D. Analytical data also indicate the materials do not contain hazardous substances identified in Table 302.4 as required under section 101(14) of CERCLA. Visual inspection of the open cut indicated the presence of materials consistent with fine to coarse grained alluvial deposits – consistent with typical sand and gravel deposits in this area. A dark black scale was noted and field and analytical data confirm the presence of iron sulfide scale. The origin of the iron sulfide is unknown – it is believed the potential existed for lime deposits, associated with sugar beet waste, created an environment suitable for leaching iron from the underlying deposits and in the presence of high sulfate groundwater and sulfate reducing bacteria resulted in the formation of iron sulfide. All sampling was performed in accordance with protocols as presented in EPA's RCRA Facility Investigation Guidance Manual. The site location is depicted on Plate 1.



4809 Four Star Court, Fort Collins, CO

970-590-3807

Method of Determination – The presence or absence of hazardous material was determined by obtaining grab samples from three locations identified as GWS-1, GWS-2 and GWS-3. The samples were obtained at a depth of two to three feet beneath the center of an excavation at locations depicted on Plate 1. Photographs of the excavation are presented in Attachment A.

The samples were submitted to Technology Laboratory of Fort Collins, Colorado and a composite of the three grab samples was analyzed for characteristics of ignitability, corrosivity, toxicity, free liquids and for volatile and semi-volatile organics. A scale analysis was also performed to determine the presence or absence of iron sulfide. The laboratory data sheets are provide in Attachment B. A review of analytical data show that organic compounds were not present in the sample(s) submitted for analysis and that the materials do not exhibit the characteristic of a hazardous waste.

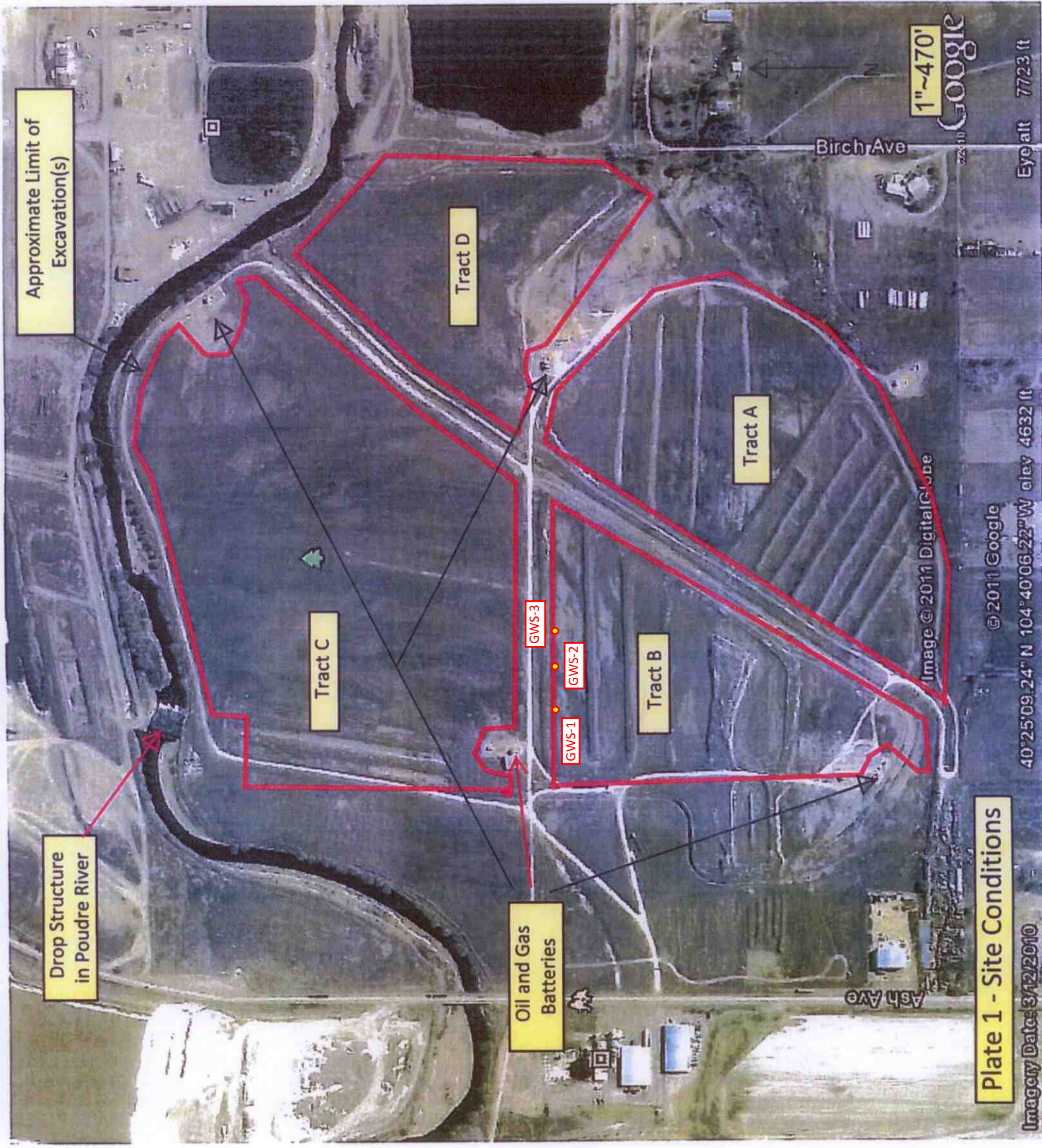
Comments – I hereby certify that I have authority as agent for the generator. I hereby certify that all information submitted in this and all attached documents are complete and accurate to the best of my knowledge and ability to determine that no deliberate or willful omission of chemical or physical composition or properties exists and that all known or suspected hazards have been disclosed.

If you have any questions regarding this letter, please contact me at 970-590-3807.

Sincerely,
AWES, LLC



Joby L. Adams, P.G.
Principal/Hydrogeologist



Approximate Limit of
Excavation(s)

Tract D

Tract A

Tract C

Tract B

GWS-3

GWS-2

GWS-1

Oil and Gas
Batteries

Drop Structure
in Poudre River

1"~470'

Google

Birch Ave

Ash Ave

Image © 2011 DigitalGlobe

Plate 1 - Site Conditions

Imagery Date: 3/12/2010

© 2011 Google

40°25'09.24" N 104°40'06.22" W elev 4632 ft

Eye alt 7723 ft

ATTACHMENT A

SITE PHOTOGRAPHS



View of Excavation – View Looking Northwest



View Looking Northeast

ATTACHMENT B

ANALYTICAL REPORT



TECHNOLOGY LABORATORY, INC.

1012 Centre Avenue
Fort Collins, Colorado 80526
(970) 490-1414

CERTIFICATE OF ANALYSIS

AWES, LLC
44809 Four Star Court
Fort Collins, CO 80524

Sample ID: GWS-1, GWS-2, GWS-3

Laboratory ID: A5601-01

Sampled: 01/30/12

Received: 01/31/12

Analyzed: 02/03/12

Project No.: GWS-001

Method: EPA-8260B

Matrix: Soil

CAS Number	Parameter	Result µg/Kg	MDL µg/Kg	CAS Number	Parameter	Result µg/Kg	MDL µg/Kg
71-43-2	Benzene	< 10	10	108-88-3	Toluene	< 10	10
100-41-4	Ethylbenzene	< 10	10	1330-20-7	Total Xylenes	< 10	10
91-20-3	Naphthalene	< 10	10	75-01-4	Vinyl Chloride	< 10	10
74-87-3	Chloromethane	< 10	10	74-83-9	Bromomethane	< 10	10
75-00-3	Chloroethane	< 10	10	75-69-4	Trichlorofluoromethane	< 10	10
75-35-4	1,1-Dichloroethene	< 10	10	156-60-5	trans-1,2-Dichloroethene	< 10	10
156-59-2	cis-1,2-Dichloroethene	< 10	10	75-09-2	Methylene Chloride	< 10	10
75-34-3	1,1-Dichloroethane	< 10	10	74-97-5	Bromochloromethane	< 10	10
67-66-3	Chloroform	< 10	10	71-55-6	1,1,1-Trichloroethane	< 10	10
56-23-5	Carbon Tetrachloride	< 10	10	107-06-2	1,2-Dichloroethane	< 10	10
79-01-6	Trichloroethene	< 10	10	78-87-5	1,2-Dichloropropane	< 10	10
75-27-4	Bromodichloromethane	< 10	10	74-95-3	Dibromomethane	< 10	10
79-00-5	1,1,2-Trichloroethane	< 10	10	142-28-9	1,3-Dichloropropane	< 10	10
590-20-7	2,2-Dichloropropane	< 10	10	563-58-6	1,1-Dichloropropene	< 10	10
10061-01-5	cis-1,3-Dichloropropene	< 10	10	10061-02-6	trans-1,3-Dichloropropene	< 10	10
127-18-4	Tetrachloroethene	< 10	10	106-93-4	1,2-Dibromoethane (EDB)	< 10	10
124-48-1	Dibromochloromethane	< 10	10	108-90-7	Chlorobenzene	< 10	10
630-20-6	1,1,1,2-Tetrachloroethane	< 10	10	100-42-5	Styrene	< 10	10
75-25-2	Bromoform	< 10	10	79-34-5	1,1,2,2-Tetrachloroethane	< 10	10
98-82-8	Isopropylbenzene	< 10	10	78-93-3	2-Butanone (MEK)	< 10	10
108-86-1	Bromobenzene	< 10	10	103-65-1	n-Propylbenzene	< 10	10
95-49-8	2-Chlorotoluene	< 10	10	106-43-4	4-Chlorotoluene	< 10	10
108-67-8	1,3,5-Trimethylbenzene	< 10	10	95-63-6	1,2,4-Trimethylbenzene	< 10	10
98-06-6	tert-Butylbenzene	< 10	10	135-98-8	sec-Butylbenzene	< 10	10
541-73-1	1,3-Dichlorobenzene	< 10	10	106-46-7	1,4-Dichlorobenzene	< 10	10
99-87-6	4-Isopropyltoluene	< 10	10	104-51-8	n-Butylbenzene	< 10	10
108-10-1	4-Methyl-2-Pentanone (MIBK)	< 10	10	120-82-1	1,2,4-Trichlorobenzene	< 10	10
87-61-6	1,2,3-Trichlorobenzene	< 10	10	87-68-3	Hexachlorobutadiene	< 10	10
95-50-1	1,2-Dichlorobenzene	< 10	10	67-64-1	Acetone	< 100	100

QA/QC SURROGATE RECOVERIES

Compound	% Recovery	% Rec. Limits
Dibromofluoromethane	97	68-120
Toluene-d8	98	81-128
Bromofluorobenzene	93	70-113



TECHNOLOGY LABORATORY, INC.

CENTRE PROFESSIONAL PARK

1012 Centre Avenue
Fort Collins, Colorado 80526
(970) 490-1414

CERTIFICATE OF ANALYSIS

AWES, LLC
44809 Four Star Court
Fort Collins, CO 80524

Sampled: 01/30/12

Received: 01/31/12

Analyzed: 02/02/12

Sample ID: GWS-1, GWS-2, GWS-3

Project No.: GWS-001

Laboratory ID: A5601-01

Method: EPA-8270C

Matrix: Soil

CAS		Result	MDL	CAS		Result	MDL
Number	Parameter	µg/Kg	µg/Kg	Number	Parameter	µg/Kg	µg/Kg
110-86-1	Pyridine	< 660	660	62-75-9	N-Nitrosodimethylamine	< 660	660
108-95-2	Phenol	< 660	660	95-57-8	2-Chlorophenol	< 660	660
111-44-4	bis(-2-Chloroethyl) Ether	< 660	660	541-73-1	1,3-Dichlorobenzene	< 660	660
106-46-7	1,4-Dichlorobenzene	< 660	660	95-50-1	1,2-Dichlorobenzene	< 660	660
100-51-6	Benzyl Alcohol	< 660	660	108-60-1	bis (2-chloroisopropyl) Ether	< 660	660
95-48-7	2-Methylphenol (O-Cresol)	< 660	660	621-64-7	N-Nitroso-di-n-propylamine	< 660	660
67-72-1	Hexachloroethane	< 660	660		3 & 4-Methylphenol (M &P-Cresol)	< 660	660
88-75-5	2-Nitrophenol	< 660	660	91-20-3	Naphthalene	< 660	660
98-95-3	Nitrobenzene	< 660	660	78-59-1	Isophorone	< 660	660
105-67-9	2,4-Dimethylphenol	< 660	660	111-91-1	bis(-2-Chloroethoxy)Methane	< 660	660
120-83-2	2,4-Dichlorophenol	< 660	660	120-82-1	1,2,4-Trichlorobenzene	< 660	660
106-47-8	4-Chloroaniline	< 660	660	91-57-6	2-Methylnaphthalene	< 660	660
77-47-4	Hexachlorocyclopentadiene	< 660	660	88-06-2	2,4,6-Trichlorophenol	< 660	660
95-95-4	2,4,5-Trichlorophenol	< 660	660	91-58-7	2-Chloronaphthalene	< 660	660
88-74-4	2-Nitroaniline	< 660	660	131-11-13	Dimethyl phthalate	< 660	660
51-28-5	2,4-Dinitrophenol	< 660	660	606-20-2	2,6-Dinitrotoluene	< 660	660
99-09-2	3-Nitroaniline	< 3300	3300	132-64-9	Dibenzofuran	< 660	660
100-02-7	4-Nitrophenol	< 660	660	121-14-2	2,4-Dinitrotoluene	< 660	660
100-01-6	4-Nitroaniline	< 3300	3300	84-66-2	Diethylphthalate	< 660	660
7005-72-3	4-Chlorophenyl-phenylether	< 660	660	208-96-8	Acenaphthylene	< 660	660
83-32-9	Acenaphthene	< 660	660	86-73-7	Fluorene	< 660	660
87-86-5	Pentachlorophenol	< 3300	3300	86-30-6	N-Nitrosodiphenylamine	< 660	660
101-55-3	4-Bromophenyl-phenylether	< 660	660	118-74-1	Hexachlorobenzene	< 660	660
84-74-2	Di-n-Butylphthalate	< 660	660	85-01-8	Phenanthrene	< 660	660
120-12-7	Anthracene	< 660	660	206-44-0	Fluoranthene	< 660	660



TECHNOLOGY LABORATORY, INC.

CENTRE PROFESSIONAL PARK

1012 Centre Avenue
Fort Collins, Colorado 80526
(970) 490-1414

CERTIFICATE OF ANALYSIS

Sample ID: GWS-1, GWS-2, GWS-3

Project No.: GWS-001

Laboratory ID: A5601-01

Method: EPA-8270C

CAS Number	Parameter	Result <u>µg/Kg</u>	MDL <u>µg/Kg</u>	CAS Number	Parameter	Result <u>µg/Kg</u>	MDL <u>µg/Kg</u>
85-68-7	Butylbenzylphthalate	< 660	660	91-94-1	3,3'-Dichlorobenzidine	< 660	660
129-00-0	Pyrene	< 660	660	117-81-7	bis (2-Ethylhexyl) Phthalate	< 660	660
56-55-3	Benzo[a]anthracene	< 660	660	218-01-9	Chrysene	< 660	660
117-84-0	Di-n-Octylphthalate	< 660	660	207-08-2	Benzo[b]fluoranthene	< 660	660
207-08-9	Benzo[k]fluoranthene	< 660	660	50-32-8	Benzo[a]pyrene	< 660	660
53-70-3	Dibenzo(a,h)anthracene	< 660	660	193-39-5	Indeno (1,2,3-cd) Pyrene	< 660	660
191-24-2	Benzo(g,h,i)perylene	< 660	660				

QA/QC SURROGATE RECOVERIES

Compound	% Recovery	% Rec. Limits
2-Fluorophenol	89	25-121
Phenol-d5	114	24-133
Nitrobenzene-d5	53	23-120
2,4,6-Tribromophenol	28	19-122
2-Fluorobiphenyl	107	30-115
Terphenyl-d14	94	18-137



TECHNOLOGY LABORATORY, INC.

CENTRE PROFESSIONAL PARK

1012 Centre Avenue
Fort Collins, Colorado 80526
(970) 490-1414

CERTIFICATE OF ANALYSIS

AWES, LLC
44809 Four Star Court
Fort Collins, CO 80524

Sample ID: GWS-1, GWS-2, GWS-3

Laboratory ID A5601-01

Sampled: 01/30/12

Received: 01/31/12

Project No.: GWS-001

Matrix: Soil

<u>CAS Number</u>	<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>MDL</u>	<u>Method</u>	<u>Date Analyzed</u>
N/A	Ignitability	Non-flammable	°F		EPA-1030	02/02/12
7440-39-3	Total Barium	10.7	mg/Kg	0.25	EPA-6010B	02/01/12
7440-43-9	Total Cadmium	< 0.25	mg/Kg	0.25	EPA-6010B	02/01/12
7440-47-3	Total Chromium	3.66	mg/Kg	0.25	EPA-6010B	02/01/12
7439-92-1	Total Lead	2.41	mg/Kg	0.15	EPA-6010B	02/01/12
7782-49-2	Total Selenium	< 0.25	mg/Kg	0.25	EPA-6010B	02/01/12
7740-22-4	Total Silver	< 0.30	mg/Kg	0.3	EPA-6010B	02/01/12
7440-38-2	Total Arsenic	< 0.25	mg/Kg	0.25	EPA-6020	02/01/12
7439-97-6	Total Mercury	< 0.25	mg/Kg	0.25	EPA-7470A	02/01/12
N/A	Reactivity HCN	2.69	mg/Kg	2	EPA-9010B	02/02/12
N/A	Reactivity H ₂ S	< 20	mg/Kg	20	EPA-9030B	02/02/12
12408-02-5	Corrosivity (pH)	5.63	units (1:1)		EPA-9045D	02/02/12
N/A	Paint Filter	No Free Liquids			EPA-9095	02/01/12

Technology Laboratory Inc.

Centre Professional Office Park

1012 Centre Avenue
Fort Collins, CO 80526
970-490-1414
info@techlabusa.com

Compositional Analysis of Scale

AWES, LLC
4809 Four Star Court
Fort Collins, CO 80524

Date Sampled: 1/30/12
Date Received: 1/31/12
Date Analyzed: 2/7/12

Sample ID: GWS-1, 2, 3
Project Number: Greeley, CO
Lab ID: 5601-01

Project Location: Greeley, CO
Matrix: Scale

<u>Component</u>	<u>Weight %</u>
------------------	-----------------

Oil & Organics (Solvent Soluble)	7.9
----------------------------------	-----

Acid Solubles (15% HCl)	4.9
-------------------------	-----

Iron (as Iron Sulfide)	2.4
Calcium (as CaCO ₃)	1.4
Magnesium (as MgCO ₃)	0.2
Sodium (as Na ₂ CO ₃)	0.1

Acid Insolubles	87.2
-----------------	------

Barium (as BaSO ₄)	0.0
Sand & Rocks	Present
Other	Absent

Scale Appearance: Black solid



TECHNOLOGY LABORATORY, INC.

1012 CENTRE AVENUE
FORT COLLINS, CO 80526
Phone: (970) 490-1414 Fax: (970) 472 5488
www.techlabusa.com info@techlabusa.com

W.O. NUMBER A5601

CHAIN-OF-CUSTODY REPORT

COMPANY NAME <u>AWES, LLC</u>		PROJECT LOCATION OR NAME <u>GREENE CO</u>		DATE/TIME SAMPLED	
PROJECT MANAGER <u>J. ADAMS</u>		PROJECT NUMBER <u>GW5-001</u>		SAMPLE ID	
PROJECT LOCATION OR NAME <u>GREENE CO</u>		PROJECT NUMBER <u>GW5-001</u>		DATE/TIME SAMPLED	
SAMPLERS SIGNATURE <u>[Signature]</u>		PROJECT NUMBER <u>GW5-001</u>		DATE/TIME SAMPLED	
SAMPLE MATRIX: SOL (S) AIR (A)		NUMBER OF CONTAINERS		ANALYSIS REQUESTED	
AQUEOUS (W) OTHER (O)		BTEX / MTBE / TVPH		OTHER	
TCEP (DRO)		Oil & Grease		VOC 624 (8260) TOTAL / TCLP	
SVOC 625 (8270) PAH		PH / TSS / TDS		RCRA 8 METALS (TOTAL / TCLP / DISSOLVED)	
React. / Ignite. / Corr. / Paint Filter		BTEX/TVPH Emissions Vapor		BTEX Soil Vapor	
TO-14/TO-15/TVPH		NITRATE / NITRITE / AMMONIA		BOD / COD	
FIXED GASES (N ₂ , O ₂ , CO ₂ , CH ₄)		PCBs		EXTENDED HYDROCARBONS	
NPDES Discharge Permit		IRON OXIDE / SULFIDE		HOLD AFTER ANALYSIS	
HOLD, DON'T ANALYZE					

SAMPLE ID	DATE/TIME SAMPLED	ANALYSIS REQUESTED
GW5-1	12/30/2012	1
GW5-2	12/30/2012	1
GW5-3	12/30/2012	1

NOTE: COMPOSITE GW5 1-3 FOR VOC/S VOC / IRON ANALYSIS

PAGE <u>1</u> OF <u>1</u>	TURNAROUND TIME	COMMENTS: <u>COMPOSITE FOR ONE ANALYSIS</u>	LOGGED IN BY:	SAMPLE PRESERVATIVE:
☒ Normal (<10 working days)	RECEIVED BY: <u>[Signature]</u>	DATE:	☒ 4°C	☐ None
☐ 3 day (1.5x Normal Rates)	COMPANY: <u>[Signature]</u>	TIME:	☐ Acid	☐ Filtered
☐ Next Day (2x Normal Rates)	RECEIVED BY:	DATE:	RECEIVED BY: <u>[Signature]</u>	
☐ Same day (4x Normal Rates)	COMPANY:	TIME:	COMPANY: <u>TLIC 1/31/12</u>	