APPENDIX D-1

PRELIMINARY GEOTECHNICAL AND ENVIRONMENTAL SITE ASSESSMENT STUDY (ENGEO, 2007).

Project No.
7970.2.001.01

October 16, 2007

Ms. Liz Warmerdam
City of Hercules
111 Civic Drive
Hercules, California 94547

Subject: Santa Fe Wetland Restoration Project
APN 404-020-049
Hercules, California

PRELIMINARY GEOTECHNICAL AND ENVIRONMENTAL SITE ASSESSMENT STUDY

Dear Ms. Warmerdam:

As requested, ENGEO Incorporated has performed a preliminary geotechnical and environmental site assessment study of the Santa Fe and Railroad Avenue site in Hercules, California (Figure 1). The primary intent of the study is to assess geotechnical and environmental conditions of near-surface soils that would be off-hauled in conjunction with wetlands restoration at the property.

Our study included the following activities:

- Collection of limited near-surface soil materials for preliminary geotechnical and environmental characterization
- Limited geotechnical and environmental laboratory testing to be used for planning purposes for the subject project
- Preparation of preliminary recommendations associated with the off-haul of the near surface soil

Based on the results of laboratory analyses of on-site soils, it is our opinion that these soils meet general specifications considered suitable off-haul and import from both geotechnical and environmental perspective. However, acceptance of import soils to other sites is the responsibility of the owner(s) and/or agent of the owner(s) of that property, and they may have specific requirements based on use and quantities of material. As such, the number of samples

and laboratory testing required for importation of soil may be highly variable, and determined by the receiving site when identified.

SITE LOCATION AND DESCRIPTION

The property consists of approximately 10 acres, located at the southwest corner of Santa Fe and Railroad Avenue in Hercules, California. San Pablo Bay is located to the north of the project with single-family residences located to the east, west and south. The site is situated approximately 5 feet lower in comparison to the streets and recreation trail at the perimeter of the site. Topographically, site elevations range from approximately 6 to 10 feet above mean sea level. A drainage swale, extending in an approximate northwest-southeast direction in the central portion of the project, and a triangular shaped area located at the northeastern corner of the site is depressed approximately 4 to 5 feet from site grades at an elevation of approximately 6 to 7 feet above mean sea level. A majority of the property is covered by seasonal vegetation.

PROPOSED DEVELOPMENT

Specific development plans are not available at this time. We understand that the proposed plan is to excavate approximately 5 feet of soil from across the site and restore the site for wetlands purposes. We understand that approximately 65,000 cubic yards of off-haul are proposed.

GEOLOGIC SETTING

The site geology was previously mapped on a regional scale by Graymer and U.S. Geological Survey (USGS). A regional geologic map showing the site location is presented as Figure 3. The subject site is situated in the Coast Ranges geomorphic province of California, which is characterized by a series of parallel, northwesterly trending, folded and faulted mountain ranges and valleys. Based on a review of the geologic map, a majority of the site is underlain by undivided Quaternary deposits. A sandstone unit is mapped adjacent to the northeastern corner of the site.

FIELD EXPLORATION

The field exploration was conducted on September 25, 2007, and consisted of drilling five hand auger exploratory borings to depths of approximately 5 feet below the existing ground surface. The approximate locations of our exploratory borings are shown on the site plan (Figure 2). The exploratory borings were approximately located by pacing or visual sighting from existing features and pacing and should be considered accurate only to the degree implied by the method used. The locations were selected to provide an approximate representation of the subsurface site conditions; however, subsurface conditions can be expected to vary laterally and vertically.

The test borings were drilled using a hand auger. Soil samples recovered during drilling were collected using a 2-inch outer diameter (O.D.) California-type split-spoon sampler fitted with 6-inch-long brass liners. The sampler was attached to a slide hammer and was driven into the ground to acquire soil samples. Samples were collected at varying depths for geotechnical and environmental purposes. Proper cleaning procedures were followed prior to collecting environmental samples from each location to prevent cross-contamination. The samples were transported under documented chain-of-custody to McCampbell Analytical in Pittsburg, California for testing. The borings were logged in the field by an ENGEO representative. The field logs were then used to develop the boring logs (Appendix A). The logs depict subsurface conditions within the borings for the date of drilling; however, subsurface conditions may vary with time.

GEOTECHNICAL CHARACTERISTICS

Subsurface Conditions - In general, subsurface conditions in the area consist of a layer of man-made fills capping the site extending to depths ranging from 3 to 5 feet below ground surface (bgs), except near a swale at the middle of the site, and a triangular shaped area to the northeast corner where the elevation is relatively lower. The fill consists of silty clay material with various amounts of claystone or siltstone fragments. Laboratory testing of this near-surface material indicated a Plasticity Index (PI) of 33, which is indicative of a high expansion potential.

A layer of highly expansive native clay is present below the fill layer extending beyond the depth of our exploration. This clay layer is soft and is characteristic of intertidal deposits (Bay Mud). Laboratory testing shows this material has a PI of 74, which indicative of an extremely high expansion potential.

Laboratory Testing - Select samples recovered during drilling were tested to determine the following soil characteristics:

Soil Characteristic	Test Method	Location of Results
Natural Unit Weight and Moisture Content	ASTM D-2216	Boring Logs, Appendix A
Atterberg Limits	ASTM D-4318	Appendix B
Gradation and Percent Passing No. 200 Sieve	ASTM D-422	Appendix B

The laboratory test results are shown on the boring logs in Appendix A, and individual test results are presented in Appendix B.

Results - From a geotechnical standpoint, the fill material is generally considered suitable for off-haul from the site depending on the requirements of the receiving site. Due to its expansion potential, the material may shrink and swell from fluctuations in moisture content; as such this material may be suitable for construction on various sites if proper treatment and conditioning of the soil are performed during fill placement depending on the needs of the receiving site. Moreover, care should be taken to segregate overlying fill materials from compressible 'Bay Mud' materials as receiving sites may find need for one material rather than the other based on their very different expansion potentials and in-situ properties.

Of geotechnical concern for the project is stability of the site during removal of the site soils and ground water conditions. ENGEO did not provide an evaluation the soils to remain in place following excavation, however due to the soft compressible nature of soils beneath the fill layer, special measures and equipment may be required for removal of these soils to allow equipment to traverse the site. It is our preliminary assessment that these concerns can be mitigated through careful planning and/or further geotechnical study as needed. If planned development for the subject area changes, alternative studies and recommendations should be performed to determine feasibility.

ENVIRONMENTAL CONSIDERATIONS

The laboratory testing was performed on a composite sample comprised of five discrete soil samples. The resulting analytical results were compared with respective California Human Health Screening Levels (CHHSLs) developed by California Environmental Protection Agency (Cal/EPA) and the Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board (SFRWQCB). None of the detected target analyte concentrations exceeded respective CHHSLs and ESLs for a residential land use scenario, representing the most conservative exposure scenario. To determine the potential of detected CAM-17 metal analytes to leach out of soil and into surface and groundwater, the samples were released for testing for soluble metal concentrations (STLC, WET method). De-ionized water has been selected as the extractant to simulate the potential action of groundwater and surface water. Lab results shows the potential for CAM-17 metals to leach out is low.

Laboratory Testing - Samples collected throughout the project site were transported under the documented chain-of-custody to McCampbell Analytical in Pittsburg, California for the following testing:

Analysis	Test Method	Location of Results
Petroleum hydrocarbons	EPA-8015	Appendix C
Organochlorine Pesticides	EPA-8081	Appendix C
Volatile Organic Compounds	EPA-8260	Appendix C
Semi-Volatile Organic Compounds	EPA-8270	Appendix C
Nitrosamines	EPA-8330	Appendix C
CAM-17 Metals	EPA-6010 EPA-6020	Appendix C
CAM-17 Metals Soluble Threshold Limit Concentration (De-Ionized)	STLC-DI	Appendix C

Results - From an environmental standpoint, based on laboratory data, the on-site soil does not appear to pose a risk to human health. Additional testing will assess the potential effects (if any) to aquatic life. From an environmental standpoint, this soil is suitable to be off-hauled for unrestricted use or for use elsewhere within the site.

LIMITATIONS

This report is issued with the understanding that it is the responsibility of the owner to transmit the information and recommendations of this report to developers, contractors, buyers, architects, engineers, and designers for the project so that the necessary steps can be taken by the contractors and subcontractors to carry out such recommendations in the field. The conclusions and recommendations contained in this report are solely professional opinions.

The professional staff of ENGEO Incorporated strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. There are risks of earth movement and property damages inherent in land development. We are unable to eliminate all risks or provide insurance; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's documents. This document must not be subject to unauthorized reuse, that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time. Actual field or other conditions will necessitate clarifications, adjustments, modifications or other changes to ENGEO's work. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications or other changes before construction activities commence or further activity proceeds. If ENGEO's scope of services does not include on-

site construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any or all claims, including, but not limited to claims arising from or resulting from the performance of such services by other persons or entities, and any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

We are pleased to be of continued service to you with regard to this project. If you have further questions, please contact us.

Very truly yours,

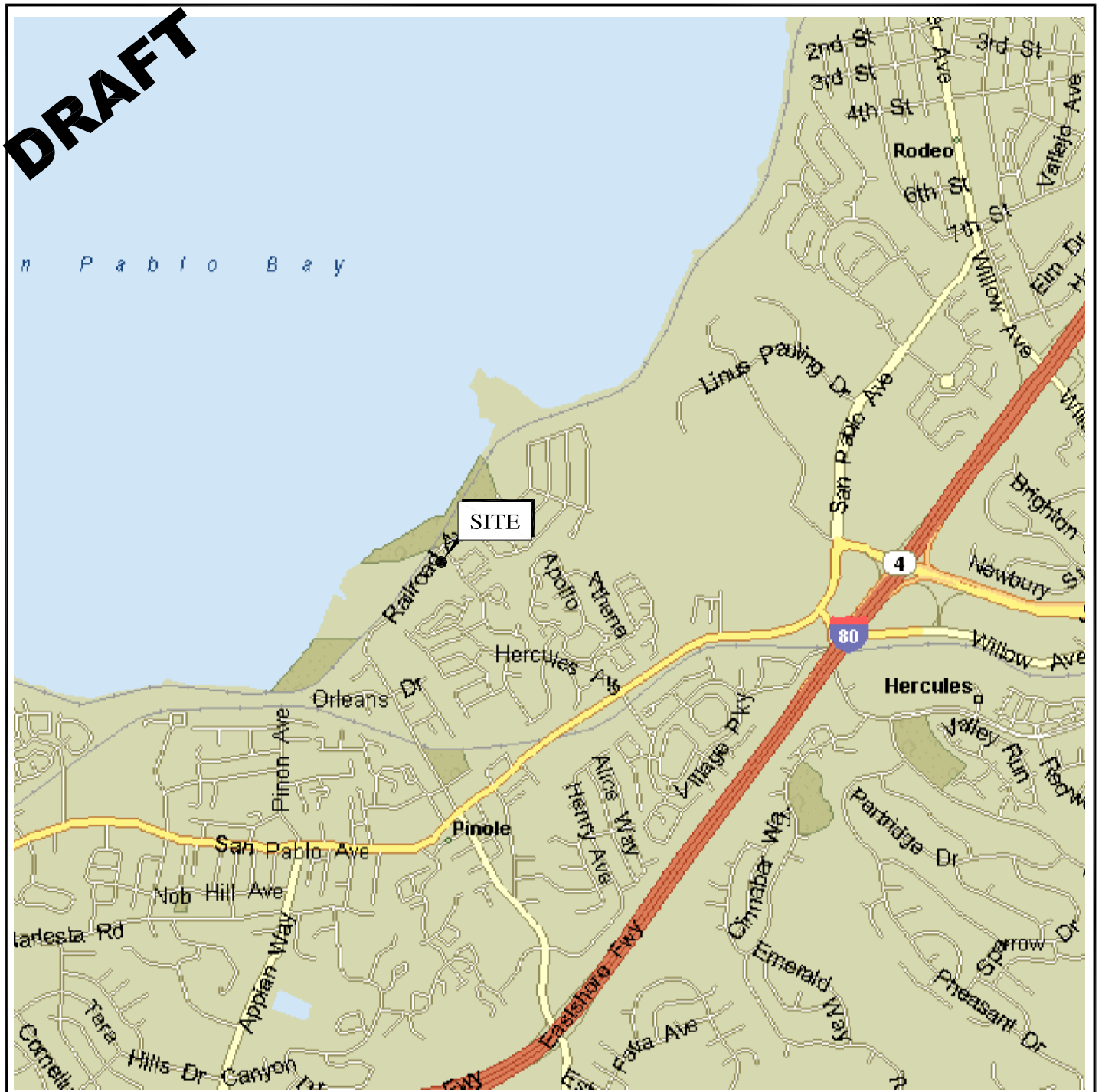
ENGEO INCORPORATED

Leroy Chan, EIT Theodore P Bayham, GE

Michelle Shriro, CE
lc/jb/ms:prelim

Attachment: Figures 1 through 3
APPENDIX A - Boring Logs
APPENDIX B - ENGEO Laboratory Testing Data
APPENDIX C - McCampbell Laboratory Testing Data

DRAFT



N

0 FEET 2000

0 METERS 1000

DRAFT

BASE MAP SOURCE: MS STREETS AND TRIPS

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

VICINITY MAP

SANTA FE WETLAND RESTORATION PROJECT

HERCULES, CALIFORNIA

PROJECT NO.: 7970.2.001.01		FIGURE NO. 1
DATE: OCTOBER 2007		
DRAWN BY: LC	CHECKED BY: TPB	

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ORIGINAL FIGURE PRINTED IN COLOR

EXPLANATION

01-B1 APPROXIMATE LOCATION OF HAND-AUGER BORING

N

BASE MAP SOURCE: GOOGLE MAPS ,2007

NO SCALE

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

SITE PLAN

SANTA FE WETLAND RESTORATION PROJECT

HERCULES, CALIFORNIA

PROJECT NO.: 7970.2.001.01		FIGURE NO. 2
DATE: OCTOBER 2007		
DRAWN BY: LC	CHECKED BY: TPB	

ORIGINAL FIGURE PRINTED IN COLOR

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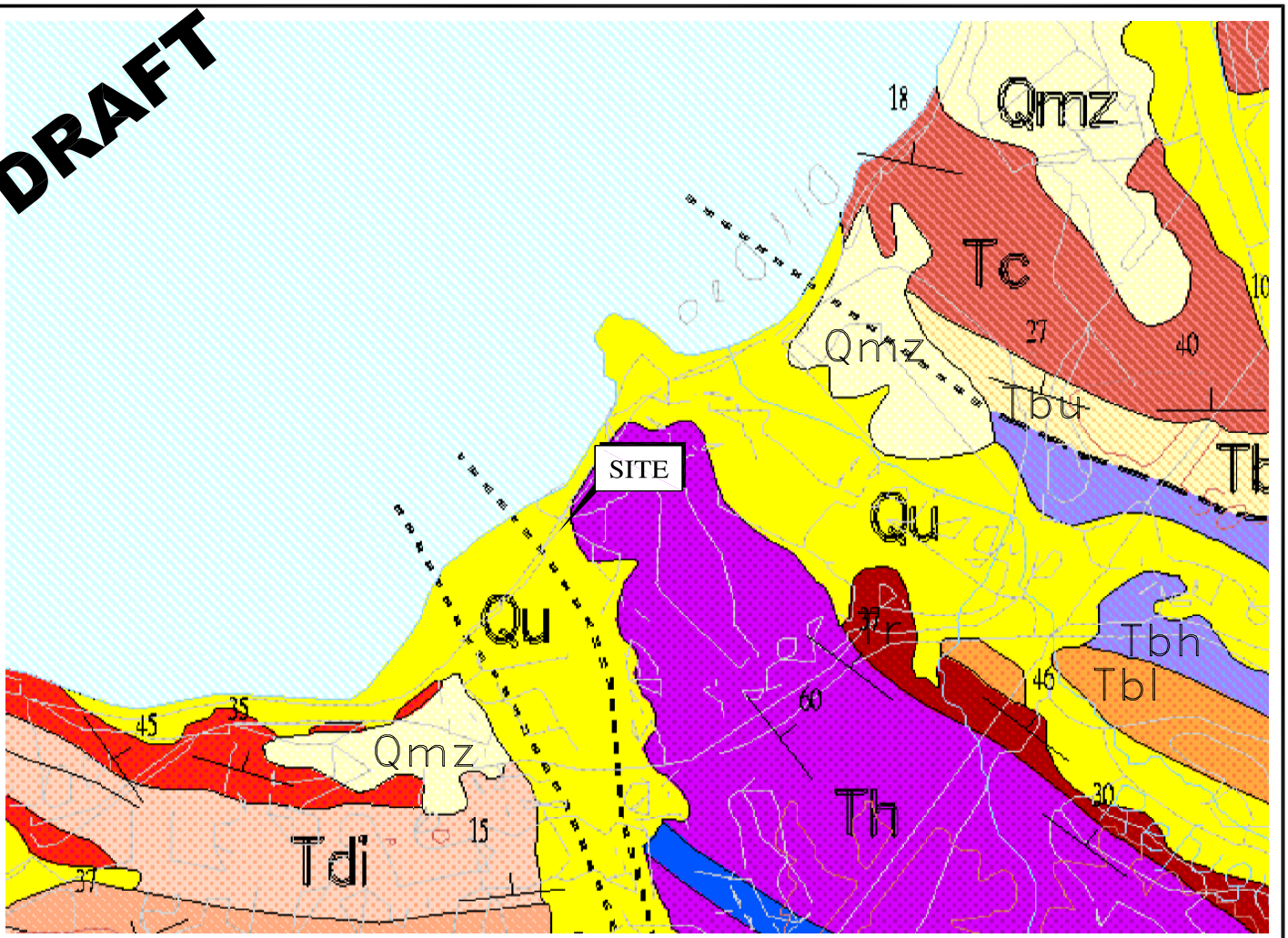

EXPLANATION

Qmz	MONTAZUMA FORMATION, SAND, CLAY AND GRAVEL
Qu	UNDIVIDED QUATERNARY DEPOSITS
Tbu	UPPER BRIONES FORMATION - SANDSTONE
Tbh	BRIONES FORMATION HERCULES SHALE MEMBER
Tbl	LOWER BRIONES FORMATION - SANDSTONE
Tr	RODEO SHALE
Th	HAMBRE SANDSTONE
Tt	TICE SHALE
Tdi	DIATOMITE
Tsa	SANDSTONE

N

0 FEET 2000

0 METERS 1000

BASE MAP SOURCE: DIBBLEE, 2005

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

GEOLOGIC MAP
SANTA FE WETLAND RESTORATION PROJECT
HERCULES, CALIFORNIA

PROJECT NO.: 7970.2.001.01		FIGURE NO. 3
DATE: OCTOBER 2007		
DRAWN BY: LC	CHECKED BY: MS	

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ORIGINAL FIGURE PRINTED IN COLOR

APPENDIX A

Boring Logs

ENGEO
Expect Excellence

LOG OF BORING 01-B1

Geotechnical Exploration
Santa Fe Restoration
Hercules, California
7970.2.001.01

DATE DRILLED: 9/25/2007
HOLE DEPTH: Approx. 3½ ft.
HOLE DIAMETER: 2.0 in.
SURF ELEV (FT-0): Approx. 10 ft.

LOGGED / REVIEWED BY: D. Rus / MS
DRILLING CONTRACTOR: ENGEO Incorporated
DRILLING METHOD: Hand Auger
HAMMER TYPE: N/A

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SILTY CLAY (CH), dark gray, dry, with angular gravel with rock fragments, (FILL)										
	1		Grades to yellow brown, moist, with claystone fragments (FILL)										
			Bottom of boring at approximately 3.5 feet. No groundwater encountered during drilling.										

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LOG OF BORING 01-B2

Geotechnical Exploration
Santa Fe Restoration
Hercules, California
7970.2.001.01

DATE DRILLED: 9/25/2007
HOLE DEPTH: Approx. 4 ft.
HOLE DIAMETER: 2.0 in.
SURF ELEV (FT-0): Approx. 6 ft.

LOGGED / REVIEWED BY: D. Rus / MS
DRILLING CONTRACTOR: ENGEO Incorporated
DRILLING METHOD: Hand Auger
HAMMER TYPE: N/A

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	1		CLAY (CH), very dark gray, moist, some organics Becomes dark gray, moist										
			Bottom of boring at approximately 4 feet. No groundwater encountered during drilling.										

LOG - GEOTECHNICAL 7970200101 BORELOGS.GPJ ENGEO INC.GDT 10/15/07

ENGEO
Expect Excellence

LOG OF BORING 01-B3

Geotechnical Exploration
Santa Fe Restoration
Hercules, California
7970.2.001.01

DATE DRILLED: 9/25/2007
HOLE DEPTH: Approx. 3½ ft.
HOLE DIAMETER: 2.0 in.
SURF ELEV (FT-0): Approx. 10 ft.

LOGGED / REVIEWED BY: D. Rus / MS
DRILLING CONTRACTOR: ENGEO Incorporated
DRILLING METHOD: Hand Auger
HAMMER TYPE: N/A

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	1		SILTY CLAY (CH), dark gray, dry, with gravel, (FILL)										
			Bottom of boring at approximately 3.5 feet. No groundwater encountered during drilling.										

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Expect Excellence

LOG OF BORING 01-B4

Geotechnical Exploration
Santa Fe Restoration
Hercules, California
7970.2.001.01

DATE DRILLED: 9/25/2007
HOLE DEPTH: Approx. 5 ft.
HOLE DIAMETER: 2.0 in.
SURF ELEV (FT-0): Approx. 7 ft.

LOGGED / REVIEWED BY: D. Rus / MS
DRILLING CONTRACTOR: ENGEO Incorporated
DRILLING METHOD: Hand Auger
HAMMER TYPE: N/A

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SILTY CLAY (CH), very dark gray, dry, with gravel with rock fragments, (FILL)										
			CLAY (CH), dark gray, moist										
1													
5			Bottom of boring at approximately 5 feet. No groundwater encountered during drilling.										

ENGEO
Expect Excellence

LOG OF BORING 01-B5

Geotechnical Exploration
Santa Fe Restoration
Hercules, California
7970.2.001.01

DATE DRILLED: 9/25/2007
HOLE DEPTH: Approx. 4½ ft.
HOLE DIAMETER: 2.0 in.
SURF ELEV (FT-0): Approx. 9 ft.

LOGGED / REVIEWED BY: D. Rus / MS
DRILLING CONTRACTOR: ENGEO Incorporated
DRILLING METHOD: Hand Auger
HAMMER TYPE: N/A

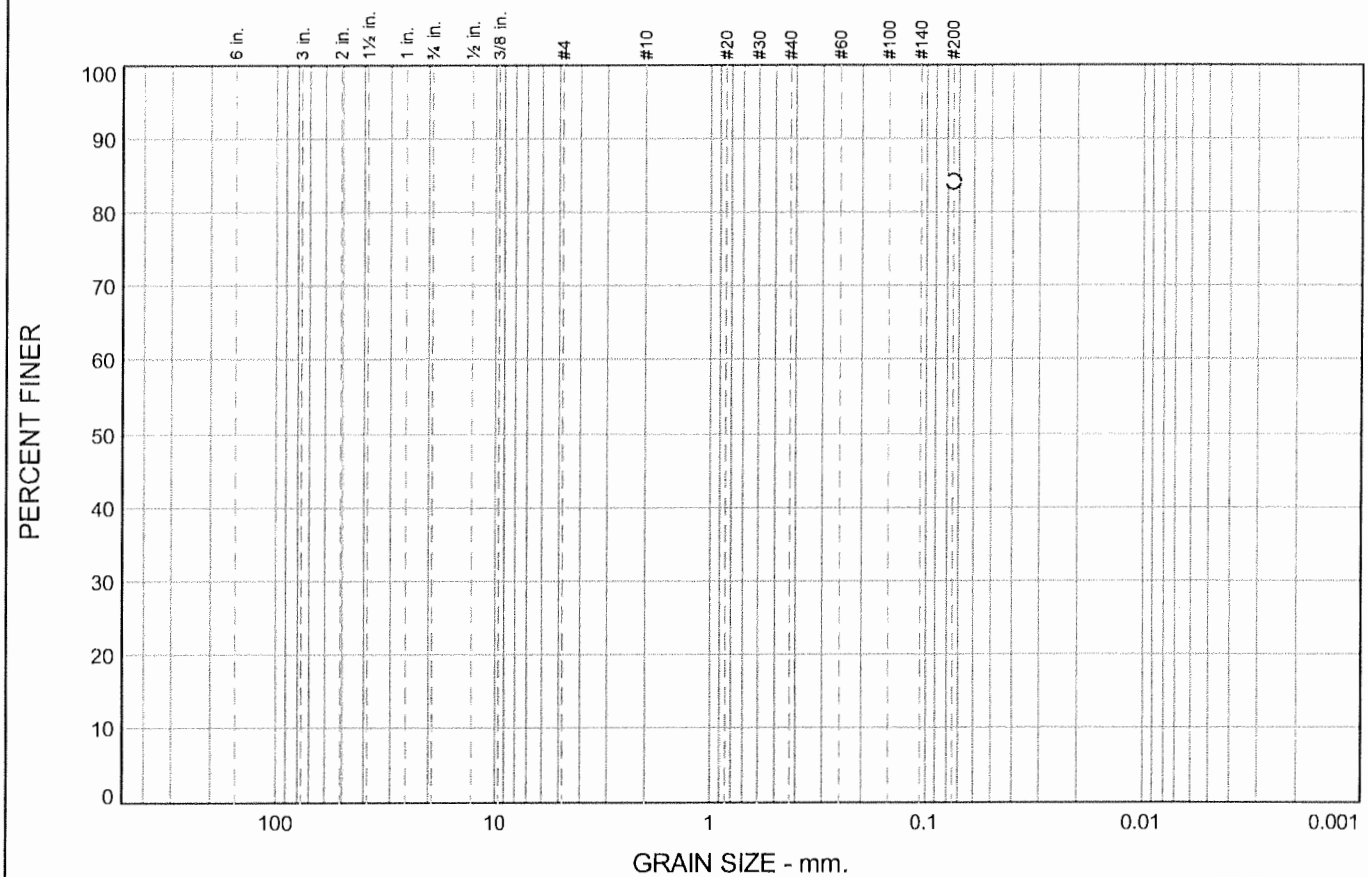
Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	1		SILTY CLAY (CH), very dark gray, dry, some gravel, trace rootlets, (FILL)										
			CLAY (CH), brownish gray, moist, trace rootlets										
			Bottom of boring at approximately 4.5 feet. No groundwater encountered during drilling.										

LOG - GEOTECHNICAL 7970200101 BORELOGS.GPJ ENGEO INC.GDT 10/15/07

APPENDIX B

ENGEO Laboratory Testing Data

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						84.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	84.2		

* (no specification provided)

Material Description

Dark gray silty CLAY.

Atterberg Limits

PL= 24 LL= 57 PI= 33

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CH AASHTO=

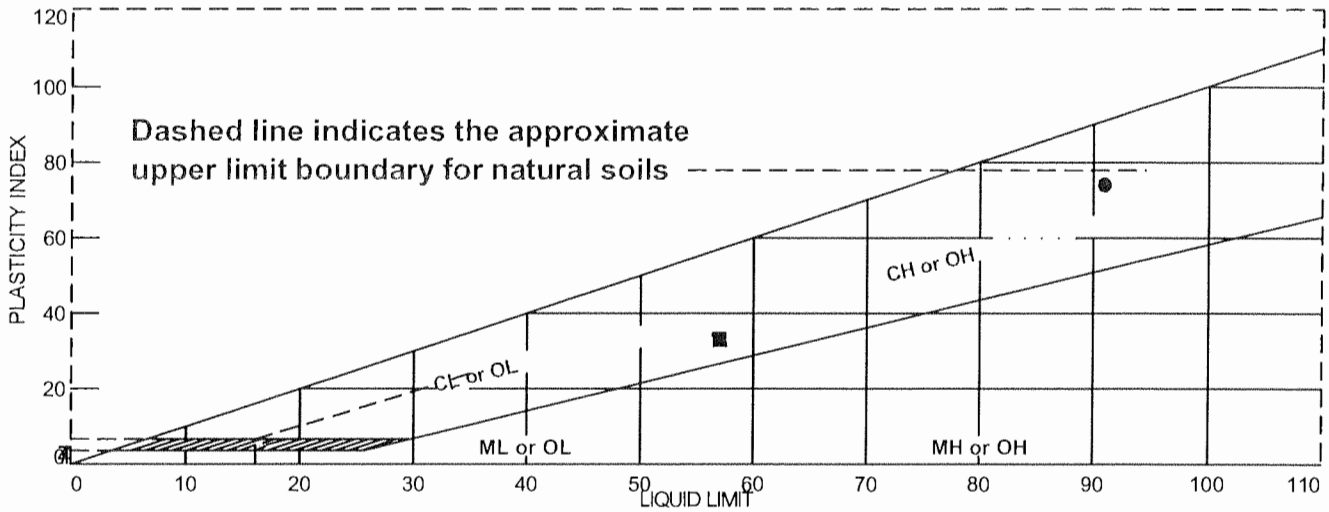
Remarks

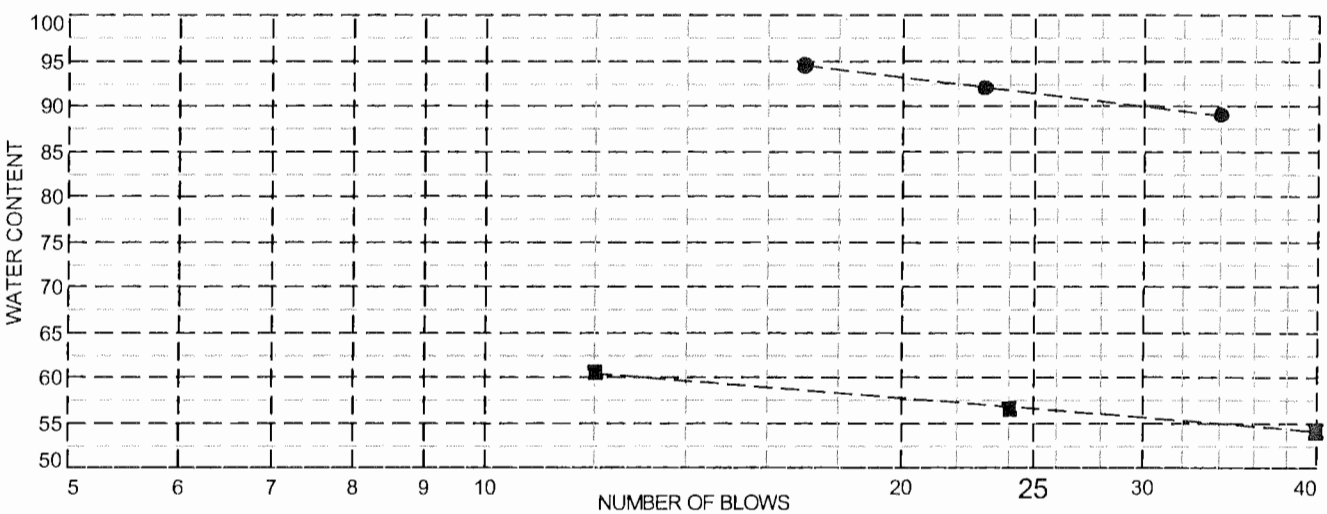
Sample Number: B1 @ 3.0' **Date:** 10/4/07

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client:
Project: Santa Fe and Hercules - Hercules, CA
Project No: 7970.2.001.01 **Plate**

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Very dark gray CLAY.	91	17	74			CH
■	Dark gray silty CLAY.	57	24	33		84.2	CH

Project No. 7970.2.001.01 **Client:**

Project: Santa Fe and Hercules - Hercules, CA

● **Sample Number:** B2 @ 3.5'

■ **Sample Number:** B1 @ 3.0'

Remarks:

ENGEO INCORPORATED

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS MATERIALS TESTING

Plate

APPENDIX C

McCampbell Laboratory Testing Data

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

ENGEO Incorporated	Client Project ID: #7970 2001 01; Santa Fe/ Rglroad	Date Sampled: 09/25/07
		Date Received: 09/26/07
2010 Crow Canyon Place, Ste 250	Client Contact: Leroy Chan	Date Extracted: 09/26/07
San Ramon, CA 94583-4634	Client P.O.:	Date Analyzed: 09/27/07

Organochlorine Pesticides by GC-ECD (8080 Basic Target List)*

Extraction Method: SW3550C Analytical Method: SW8081B Work Order: 0709613

					Reporting Limit for DF =1	
Lab ID	0709613-001A					
Client ID	01-(B1, B2, B3, B4, B5)					
Matrix	S				S	W
DF	1					
Compound	**Concentration**				mg/kg	µg/L
Aldrin	ND				0.001	NA
a-BHC	ND				0.001	NA
b-BHC	ND				0.001	NA
d-BHC	ND				0.001	NA
g-BHC	ND				0.001	NA
Chlordane (Technical)	ND				0.025	NA
a-Chlordane	0.0025				0.001	NA
g-Chlordane	0.0018				0.001	NA
p,p-DDD	ND				0.001	NA
p,p-DDE	ND				0.001	NA
p,p-DDT	ND				0.001	NA
Dieldrin	ND				0.001	NA
Endosulfan I	ND				0.001	NA
Endosulfan II	ND				0.001	NA
Endosulfan sulfate	ND				0.001	NA
Endrin	ND				0.001	NA
Endrin aldehyde	ND				0.001	NA
Heptachlor	ND				0.001	NA
Heptachlor epoxide	ND				0.001	NA
Hexachlorobenzene	ND				0.01	NA
Hexachlorocyclopentadiene	ND				0.02	NA
Methoxychlor	ND				0.001	NA
Toxaphene	ND				0.05	NA
Surrogate Recoveries (%)						
%SS:	110					
Comments						

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak/sample contains surrogate.

(h) a lighter than water immiscible sheen/product is present; (i) liquid sample that contains >~1 vol. % sediment; (j) sample diluted due to high organic content; (k) p,p,- is the same as 4,4,-; (l) florisil (EPA 3620) cleanup; (m) silica-gel (EPA 3630) cleanup; (n) elemental sulfur (EPA 3660) cleanup; (o) sulfuric acid permanganate (EPA 3665) cleanup; (r) results are reported on a dry weight basis; (p) see attached narrative.

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

ENGEO Incorporated	Client Project ID: #7970 2001 01; Santa Fe/ Rglroad	Date Sampled: 09/25/07
		Date Received: 09/26/07
2010 Crow Canyon Place, Ste 250	Client Contact: Leroy Chan	Date Extracted: 09/26/07
San Ramon, CA 94583-4634	Client P.O.:	Date Analyzed 09/30/07

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0709613

Lab ID	0709613-001A
Client ID	01-(B1, B2, B3, B4, B5)
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	Acrolein (Propenal)	ND	1.0	0.05
Acrylonitrile	ND	1.0	0.02	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	2-Chloroethyl Vinyl Ether	ND	1.0	0.01
Chloroform	ND	1.0	0.005	Chloromethane	ND	1.0	0.005
2-Chlorotoluene	ND	1.0	0.005	4-Chlorotoluene	ND	1.0	0.005
Dibromochloromethane	ND	1.0	0.005	1,2-Dibromo-3-chloropropane	ND	1.0	0.005
1,2-Dibromoethane (EDB)	ND	1.0	0.005	Dibromomethane	ND	1.0	0.005
1,2-Dichlorobenzene	ND	1.0	0.005	1,3-Dichlorobenzene	ND	1.0	0.005
1,4-Dichlorobenzene	ND	1.0	0.005	Dichlorodifluoromethane	ND	1.0	0.005
1,1-Dichloroethane	ND	1.0	0.005	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.005
1,1-Dichloroethene	ND	1.0	0.005	cis-1,2-Dichloroethene	ND	1.0	0.005
trans-1,2-Dichloroethene	ND	1.0	0.005	1,2-Dichloropropane	ND	1.0	0.005
1,3-Dichloropropane	ND	1.0	0.005	2,2-Dichloropropane	ND	1.0	0.005
1,1-Dichloropropene	ND	1.0	0.005	cis-1,3-Dichloropropene	ND	1.0	0.005
trans-1,3-Dichloropropene	ND	1.0	0.005	Diisopropyl ether (DIPE)	ND	1.0	0.005
Ethylbenzene	ND	1.0	0.005	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005
Freon 113	ND	1.0	0.1	Hexachlorobutadiene	ND	1.0	0.005
Hexachloroethane	ND	1.0	0.005	2-Hexanone	ND	1.0	0.005
Isopropylbenzene	ND	1.0	0.005	4-Isopropyl toluene	ND	1.0	0.005
Methyl-t-butyl ether (MTBE)	ND	1.0	0.005	Methylene chloride	ND	1.0	0.005
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005	Naphthalene	ND	1.0	0.005
Nitrobenzene	ND	1.0	0.1	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes	ND	1.0	0.005

Surrogate Recoveries (%)

%SS1:	109	%SS2:	96
%SS3:	95		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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ENGEO Incorporated	Client Project ID: #7970 2001 01; Santa Fe/ Rgl road	Date Sampled: 09/25/07
		Date Received: 09/26/07
2010 Crow Canyon Place, Ste 250	Client Contact: Leroy Chan	Date Extracted: 09/26/07
San Ramon, CA 94583-4634	Client P.O.:	Date Analyzed 09/27/07

Semi-Volatile Organics by GC/MS (Basic Target List)*

Extraction Method: SW3550C Analytical Method: SW8270C Work Order: 0709613

Lab ID	0709613-001A
Client ID	01-(B1, B2, B3, B4, B5)
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acenaphthene	ND	1.0	0.33	Acenaphthylene	ND	1.0	0.33
Acetochlor	ND	1.0	0.33	Anthracene	ND	1.0	0.33
Benzidine	ND	1.0	1.6	Benzoic Acid	ND	1.0	1.6
Benzo(a)anthracene	ND	1.0	0.33	Benzo(b)fluoranthene	ND	1.0	0.33
Benzo(k)fluoranthene	ND	1.0	0.33	Benzo(g,h,i)perylene	ND	1.0	0.33
Benzo(a)pyrene	ND	1.0	0.33	Benzyl Alcohol	ND	1.0	0.66
1,1-Biphenyl	ND	1.0	0.33	Bis (2-chloroethoxy) Methane	ND	1.0	0.33
Bis (2-chloroethyl) Ether	ND	1.0	0.33	Bis (2-chloroisopropyl) Ether	ND	1.0	0.33
Bis (2-ethylhexyl) Phthalate	ND	1.0	0.33	4-Bromophenyl Phenyl Ether	ND	1.0	0.33
Butylbenzyl Phthalate	ND	1.0	0.33	4-Chloroaniline	ND	1.0	0.66
4-Chloro-3-methylphenol	ND	1.0	0.33	2-Chloronaphthalene	ND	1.0	0.33
2-Chlorophenol	ND	1.0	0.33	4-Chlorophenyl Phenyl Ether	ND	1.0	0.33
Chrysene	ND	1.0	0.33	Dibenzo(a,h)anthracene	ND	1.0	0.33
Dibenzofuran	ND	1.0	0.33	Di-n-butyl Phthalate	ND	1.0	0.33
1,2-Dichlorobenzene	ND	1.0	0.33	1,3-Dichlorobenzene	ND	1.0	0.33
1,4-Dichlorobenzene	ND	1.0	0.33	3,3-Dichlorobenzidine	ND	1.0	0.66
2,4-Dichlorophenol	ND	1.0	0.33	Diethyl Phthalate	ND	1.0	0.33
2,4-Dimethylphenol	ND	1.0	0.33	Dimethyl Phthalate	ND	1.0	0.33
4,6-Dinitro-2-methylphenol	ND	1.0	1.6	2,4-Dinitrophenol	ND	1.0	1.6
2,4-Dinitrotoluene	ND	1.0	0.33	2,6-Dinitrotoluene	ND	1.0	0.33
Di-n-octyl Phthalate	ND	1.0	0.33	1,2-Diphenylhydrazine	ND	1.0	0.33
Fluoranthene	ND	1.0	0.33	Fluorene	ND	1.0	0.33
Hexachlorobenzene	ND	1.0	0.33	Hexachlorobutadiene	ND	1.0	0.33
Hexachlorocyclopentadiene	ND	1.0	1.6	Hexachloroethane	ND	1.0	0.33
Indeno (1,2,3-cd) pyrene	ND	1.0	0.33	Isophorone	ND	1.0	0.33
2-Methylnaphthalene	ND	1.0	0.33	2-Methylphenol (o-Cresol)	ND	1.0	0.33
3 &/or 4-Methylphenol (m,p-Cres	ND	1.0	0.33	Naphthalene	ND	1.0	0.33
2-Nitroaniline	ND	1.0	1.6	3-Nitroaniline	ND	1.0	1.6
4-Nitroaniline	ND	1.0	1.6	Nitrobenzene	ND	1.0	0.33
2-Nitrophenol	ND	1.0	1.6	4-Nitrophenol	ND	1.0	1.6
N-Nitrosodiphenylamine	ND	1.0	0.33	N-Nitrosodi-n-propylamine	ND	1.0	0.33
Pentachlorophenol	ND	1.0	1.6	Phenanthrene	ND	1.0	0.33
Phenol	ND	1.0	0.33	Pyrene	ND	1.0	0.33
1,2,4-Trichlorobenzene	ND	1.0	0.33	2,4,5-Trichlorophenol	ND	1.0	0.33
2,4,6-Trichlorophenol	ND	1.0	0.33				

Surrogate Recoveries (%)

%SS1:	91	%SS2:	68
%SS3:	102	%SS4:	84
%SS5:	77	%SS6:	89

Comments:

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

#) surrogate diluted out of range; &) low or no surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit raised due to insufficient sample amount; m) reporting limit raised due to matrix interference; r) results are reported on a dry weight basis.

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ENGEO Incorporated	Client Project ID: #7970 2001 01; Santa Fe/ Rglroad	Date Sampled: 09/25/07
2010 Crow Canyon Place, Ste 250		Date Received: 09/26/07
San Ramon, CA 94583-4634	Client Contact: Leroy Chan	Date Extracted: 09/26/07
	Client P.O.:	Date Analyzed 09/28/07

Nitroaromatics and Nitroamines by HPLC*

Extraction Method: SW3550C Analytical Method: SW8330A Work Order: 0709613

					Reporting Limit for DF =1	
Lab ID	0709613-001A					
Client ID	01-(B1, B2, B3, B4, B5)					
Matrix	S				S	W
DF	1					

Compound	Concentration				mg/Kg	µg/L
2-Amino-4,6-dinitrotoluene (2-Am-D	ND				0.08	NA
4-Amino-2,6-dinitrotoluene (4-Am-D	ND				0.08	NA
1,3-Dinitrobenzene (1,3-DNB)	ND				0.08	NA
2,4-Dinitrotoluene (2,4-DNT)	ND				0.08	NA
2,6-Dinitrotoluene (2,6-DNT)	ND				0.08	NA
HMX	ND				0.08	NA
Nitrobenzene (NB)	ND				0.08	NA
2-Nitrotoluene (2-NT)	ND				0.08	NA
3-Nitrotoluene (3-NT)	ND				0.08	NA
4-Nitrotoluene (4-NT)	ND				0.08	NA
RDX	ND				0.08	NA
1,3,5-Trinitrobenzene (1,3,5-TNB)	ND				0.08	NA
2,4,6-Trinitrotoluene (2,4,6-TNT)	ND				0.08	NA
Tetryl	ND				0.08	NA

Surrogate Recoveries (%)					
%SS:	103				
Comments					

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content.

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ENGEO Incorporated	Client Project ID: #7970 2001 01; Santa Fe/ Rglroad	Date Sampled: 09/25/07
2010 Crow Canyon Place, Ste 250		Date Received: 09/26/07
San Ramon, CA 94583-4634	Client Contact: Leroy Chan	Date Extracted: 09/26/07
	Client P.O.:	Date Analyzed 10/01/07

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0709613

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0709613-001A	01-(B1, B2, B3, B4, B5)	S	2.5,g,b	1	107

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit; o) results are reported on a dry weight basis.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8081B

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0709613

EPA Method SW8081B	Extraction SW3550C				BatchID: 30869				Spiked Sample ID: 0709595-003A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/kg	mg/kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Aldrin	ND<0.010	0.010	94.9	103	8.02	114	114	0	70 - 130	30	70 - 130	30
g-BHC	ND<0.010	0.010	77	81.4	5.63	93.1	93.4	0.269	70 - 130	30	70 - 130	30
p,p-DDT	ND<0.010	0.025	82.1	108	27.7	98.1	98.2	0.122	70 - 130	30	70 - 130	30
Dieldrin	ND<0.010	0.025	113	123	8.55	112	112	0	70 - 130	30	70 - 130	30
Endrin	ND<0.010	0.025	103	122	17.1	112	112	0	70 - 130	30	70 - 130	30
Heptachlor	ND<0.010	0.010	77.7	82.9	6.47	93.4	93.9	0.543	70 - 130	30	70 - 130	30
%SS:	119	0.050	119	124	3.93	120	121	0.436	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 30869 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0709613-001A	09/25/07 1:00 PM	09/26/07	09/27/07 6:38 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8270C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0709613

EPA Method SW8270C	Extraction SW3550C			BatchID: 30881				Spiked Sample ID: 0709611-002A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Acenaphthene	ND	2	79	80.8	2.27	86.6	86.8	0.334	30 - 130	30	30 - 130	30
4-Chloro-3-methylphenol	ND	4	78.7	79	0.298	88.2	87.9	0.295	30 - 130	30	30 - 130	30
2-Chlorophenol	ND	4	88.2	88.2	0	95.7	95.8	0.104	30 - 130	30	30 - 130	30
1,4-Dichlorobenzene	ND	2	77	77.5	0.751	85.6	85.8	0.152	30 - 130	30	30 - 130	30
2,4-Dinitrotoluene	ND	2	77	80.3	4.26	84.1	84.1	0	30 - 130	30	30 - 130	30
4-Nitrophenol	ND	4	77.8	79.3	1.82	79.2	79.3	0.132	30 - 130	30	30 - 130	30
N-Nitrosodi-n-propylamine	ND	2	96.2	95.5	0.668	112	111	0.654	30 - 130	30	30 - 130	30
Pentachlorophenol	ND	4	91.8	92.8	0.986	85.4	84.4	1.15	30 - 130	30	30 - 130	30
Phenol	ND	4	81	78.1	3.63	93.9	95	1.26	30 - 130	30	30 - 130	30
Pyrene	ND	2	85.7	91	6.00	93.7	94.7	1.10	30 - 130	30	30 - 130	30
1,2,4-Trichlorobenzene	ND	2	84.3	92.9	9.67	85.7	84.7	1.14	30 - 130	30	30 - 130	30
%SS1:	101	200	99	98	1.21	111	112	0.499	30 - 130	30	30 - 130	30
%SS2:	83	200	94	95	1.38	113	113	0	30 - 130	30	30 - 130	30
%SS3:	99	200	99	107	7.74	108	107	0.408	30 - 130	30	30 - 130	30
%SS4:	86	200	85	84	1.37	99	99	0	30 - 130	30	30 - 130	30
%SS5:	85	200	88	95	7.01	102	102	0	30 - 130	30	30 - 130	30
%SS6:	91	200	91	95	4.69	104	105	0.778	30 - 130	30	30 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 30881 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0709613-001A	09/25/07 1:00 PM	09/26/07	09/27/07 4:03 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8330A

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0709613

EPA Method SW8330A	Extraction SW3550C				BatchID: 30885				Spiked Sample ID: 0709613-001a			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
HMX	ND	0.80	80.8	80.8	0	84.9	85.3	0.521	70 - 130	30	70 - 130	30
2-Nitrotoluene (2-NT)	ND	0.80	82.4	80.8	1.94	94.1	88.6	6.07	70 - 130	30	70 - 130	30
3-Nitrotoluene (3-NT)	ND	0.80	92.6	91.5	1.24	104	99.4	4.02	70 - 130	30	70 - 130	30
4-Nitrotoluene (4-NT)	ND	0.80	87.4	86.2	1.46	99.6	95	4.70	70 - 130	30	70 - 130	30
RDX	ND	0.80	96.3	95.7	0.633	100	101	0.900	70 - 130	30	70 - 130	30
1,3,5-Trinitrobenzene (1,3,5-TNB)	ND	0.80	84.1	85.8	2.00	88.9	90	1.16	70 - 130	30	70 - 130	30
%SS:	103	4	114	109	4.31	94	111	16.1	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 30885 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0709613-001A	09/25/07 1:00 PM	09/26/07	09/28/07 3:15 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0709613

EPA Method SW8015C	Extraction SW3550C				BatchID: 30849			Spiked Sample ID: 0709563-011A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	12	20	104	94.2	6.05	111	110	1.45	70 - 130	30	70 - 130	30
%SS:	103	50	110	104	5.70	105	85	20.9	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 30849 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0709613-001A	09/25/07 1:00 PM	09/26/07	10/01/07 5:14 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0709613

EPA Method SW8260B	Extraction SW5030B			BatchID: 30862				Spiked Sample ID: 0709599-004A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	97	94.9	2.15	91.8	91.9	0.136	70 - 130	30	70 - 130	30
Benzene	ND	0.050	89.1	87.9	1.37	87.4	87	0.546	70 - 130	30	70 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	104	103	1.32	91.1	90.2	1.05	70 - 130	30	70 - 130	30
Chlorobenzene	ND	0.050	117	114	2.46	114	114	0	70 - 130	30	70 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	127	125	1.41	129	126	2.49	70 - 130	30	70 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	91.5	86.3	5.81	86.1	86.9	0.889	70 - 130	30	70 - 130	30
1,1-Dichloroethene	ND	0.050	107	105	1.88	104	104	0	70 - 130	30	70 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	95.4	94.5	0.967	92.7	92	0.775	70 - 130	30	70 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	86.3	85.2	1.30	83.5	82.8	0.855	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	99	97.1	2.01	94	93.9	0.146	70 - 130	30	70 - 130	30
Toluene	ND	0.050	95.3	93.4	2.05	92.4	91.8	0.557	70 - 130	30	70 - 130	30
Trichloroethene	ND	0.050	96.4	96.6	0.254	95.9	95.3	0.587	70 - 130	30	70 - 130	30
%SS1:	91	0.050	94	95	0.745	96	96	0	70 - 130	30	70 - 130	30
%SS2:	98	0.050	93	91	1.27	91	91	0	70 - 130	30	70 - 130	30
%SS3:	100	0.050	99	99	0	97	98	1.04	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 30862 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0709613-001A	09/25/07 1:00 PM	09/26/07	09/30/07 10:44 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR 6020A

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0709613

EPA Method 6020A			Extraction SW3050B			BatchID: 30949				Spiked Sample ID 0709693-009A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	Spiked	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	mg/Kg	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Antimony	0.81	50	103	103	0	10	102	104	2.13	70 - 130	20	80 - 120	20
Arsenic	8.4	50	100	98.2	1.86	10	101	105	4.37	70 - 130	20	80 - 120	20
Barium	210	500	105	105	0	100	101	104	2.15	70 - 130	20	80 - 120	20
Beryllium	0.54	50	90.1	87.7	2.71	10	99	104	5.17	70 - 130	20	80 - 120	20
Cadmium	ND	50	101	101	0	10	100	104	3.81	70 - 130	20	80 - 120	20
Chromium	78	50	100	92.2	3.24	10	98.2	100	2.32	70 - 130	20	80 - 120	20
Cobalt	19	50	98.2	96.5	1.22	10	106	109	2.98	70 - 130	20	80 - 120	20
Copper	38	50	103	97.5	3.27	10	95.5	97.7	2.22	70 - 130	20	80 - 120	20
Lead	11	50	101	99.7	1.02	10	102	105	3.10	70 - 130	20	80 - 120	20
Mercury	ND	1.25	99.7	97.6	2.11	0.25	95.9	98.4	2.55	70 - 130	20	80 - 120	20
Molybdenum	ND	50	99.3	99.1	0.200	10	98.3	102	3.41	70 - 130	20	80 - 120	20
Nickel	100	50	136, F1	125	3.35	10	97.4	99.9	2.48	70 - 130	20	80 - 120	20
Selenium	ND	50	103	101	2.03	10	103	107	3.90	70 - 130	20	80 - 120	20
Silver	ND	50	103	102	0.624	10	99.5	97.3	2.28	70 - 130	20	80 - 120	20
Thallium	ND	50	99.5	99	0.502	10	98	101	2.73	70 - 130	20	80 - 120	20
Vanadium	43	50	97.6	92.4	2.88	10	98.7	101	2.28	70 - 130	20	80 - 120	20
Zinc	69	500	97.8	96.9	0.846	100	101	104	2.54	70 - 130	20	80 - 120	20
%SS:	99	250	105	103	1.43	250	96	99	2.30	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

F1 = MS / MSD outside of acceptance criteria. LCS - LCSD validate prep batch.

BATCH 30949 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0709613-001A	09/25/07 1:00 PM	10/03/07	10/05/07 12:57 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte

DHS ELAP Certification N° 1644

QA/QC Officer

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ENGEO Incorporated	Client Project ID: #7970 2001 01; Santa Fe/ Railroad	Date Sampled: 09/25/07
		Date Received: 09/26/07
2010 Crow Canyon Place, Ste 250	Client Contact: Leroy Chan	Date Extracted: 10/10/07-10/12/07
San Ramon, CA 94583-4634	Client P.O.:	Date Analyzed 10/16/07

CAM / CCR 17 Metals*

					Reporting Limit for DF =1; ND means not detected above the reporting limit	
Lab ID	0709613-001A					
Client ID	01-(B1, B2, B3, B4, B5)					
Matrix	S				S	W
Extraction Type	DI WET				mg/L	mg/L

ICP-MS Metals, Concentration*

Analytical Method: 6020A Extraction Method: CA Title22modified Work Order: 0709613

Dilution Factor	1				1	1
Antimony	0.0023				0.0005	NA
Arsenic	0.018				0.0005	NA
Barium	0.40				0.005	NA
Beryllium	ND				0.0005	NA
Cadmium	ND				0.00025	NA
Chromium	0.00053				0.0005	NA
Cobalt	ND				0.0005	NA
Copper	0.014				0.0005	NA
Lead	ND				0.0005	NA
Mercury	0.000069				0.00005	NA
Molybdenum	0.016				0.0005	NA
Nickel	0.0024				0.0005	NA
Selenium	0.0012				0.0005	NA
Silver	ND				0.0005	NA
Thallium	ND				0.0005	NA
Vanadium	0.021				0.0005	NA
Zinc	0.048				0.005	NA
%SS:	N/A					

Comments

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

TOTAL = acid digestion.

WET = Waste Extraction Test (STLC).

DI WET = Waste Extraction Test using de-ionized water.

i) aqueous sample containing greater than ~1 vol. % sediment; for DISSOLVED metals, this sample has been preserved prior to filtration; for TOTAL^ metals, a representative sediment-water mixture was digested; j) reporting limit raised due to insufficient sample amount; k) reporting limit raised due to matrix interference; m) estimated value due to low/high surrrogate recovery, caused by matrix interference; n) results are reported on a dry weight basis; p) see attached narrative.