

**State of Colorado**  
**Oil and Gas Conservation Commission**

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY	
Received 12/09/14	
REM 8798	
Doc 2313343	
OGCC Employee:	
<input type="checkbox"/> Spill	<input type="checkbox"/> Complaint
<input type="checkbox"/> Inspection	<input type="checkbox"/> NOAV
Tracking No: 2146021	

**SITE INVESTIGATION AND REMEDIATION WORKPLAN**

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe): Spill/Release 2146021

OGCC Operator Number: <u>10110</u>	Contact Name and Telephone:
Name of Operator: <u>Great Western Operating Company, LLC</u>	<u>Scot A. Donato, EH&amp;S/ Regulatory Manager</u>
Address: <u>1801 Broadway, Suite 500</u>	No: <u>(303) 398-0302</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	Fax: <u>(866) 742-1784</u> Email: <u>sdonato@gwogco.com</u>
API Number: <u>05-001-07734</u>	County: <u>Adams</u>
Facility Name: <u>GREAT WESTERN CLYDE E. WILLIAM 3</u>	Facility Number: <u>320036</u>
Well Name: <u>CLYDE E. WILLIAMS JR.</u>	Well Number: <u>3</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWNE 34 2S 64W 6th PM</u> Latitude: <u>39.834722</u> Longitude: <u>-104.53398</u>	

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): produced water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): agricultural, vacant

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Weld-Deertrail complex, 0 to 3 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): See form 19 submitted on 09/06/13

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>excavation dimensions: ~30'x30'x20'</u>	<u>soil samples collected during excavation and removal of impacted soils</u>
<input type="checkbox"/> Vegetation		<u>Production</u>
<input type="checkbox"/> Groundwater	<u>Weld-Deertrail complex, 0 to 3 percent slopes</u>	<u>0.40 miles</u>
<input type="checkbox"/> Surface Water	<u>0.10 mile</u>	<u>within 1 mile</u>

**REMEDIALTION WORKPLAN**

Describe initial action taken (if previously provided, refer to that form or document):

Limited excavation and stockpiling of visibly impacted soils. Collected initial excavation soil samples for laboratory analysis. See Form 19 submitted for the site on 09/06/13.

Describe how source is to be removed:

Soil excavation based on staining, odors, and final laboratory analytical results was conducted at the location of the former produced water vessel during October 2014.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Source removal was conducted through impacted soil excavation. Confirmation wall and base soil samples were collected and analyzed for GRO/DRO/EC/pH. Removed soils were disposed of at Waste Management's Conservation Services, Inc. landfill in Bennett, Colorado.



**REMEDIAL WORKPLAN (Cont.)**

Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):  
Ground water was not encountered in the excavation. Impacted soils did not extend to the depth of ground water.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.  
The site will be reclaimed in accordance with the 1000 series rules.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☐ Y ☒ N If yes, describe:

Please see attached narrative, diagram, and laboratory analytical results.

Great Western Operating Company, LLC requests closure of this site.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):  
Removed soils were disposed of at Waste Management's Conservation Services, Inc. landfill in Bennett, Colorado.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 09/12/13	Date Site Investigation Completed: 10/27/14	Date Remediation Plan Submitted: N/A
Remediation Start Date: 10/08/14	Anticipated Completion Date: N/A	Actual Completion Date: 10/27/14

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Scot. A. Donato

Signed: Scot. A. Donato

Title: EH&S/Regulatory Manager

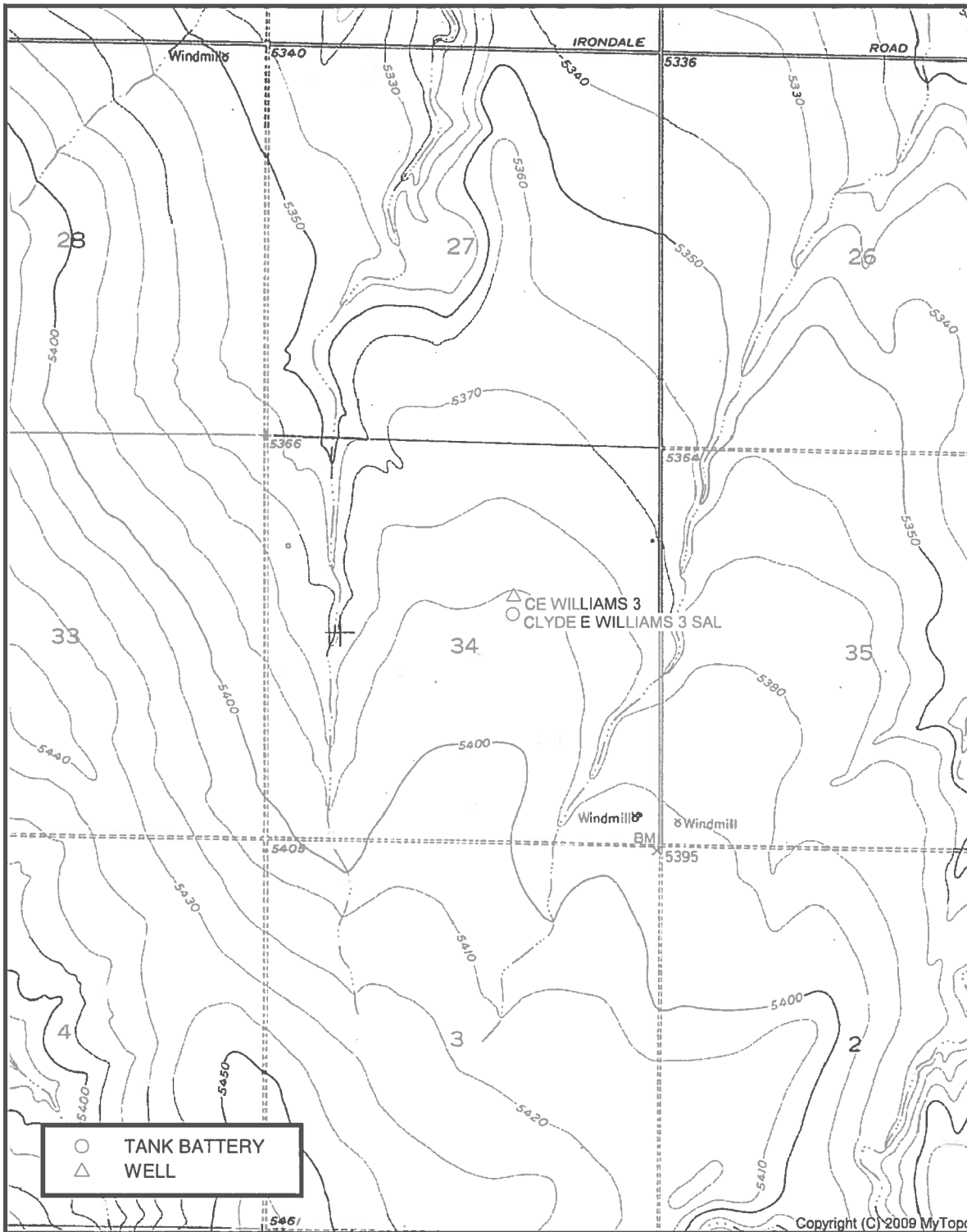
Date: 12/09/14

OGCC Approved: Robert H. Chesson

Digitally signed by Robert H. Chesson  
DN: cn=Robert H. Chesson, o=Colorado  
Oil and Gas Conservation Commission,  
ou, email=robert.chesson@state.co.us,  
c=US  
Date: 2014.12.09 16:12:44 -0700

Title: EPS

Date: 12/9/14



SCALE 1:24000  
0 1000 2000 3000 4000 5000  
FEET



**A.G. Wassenaar** | **Inc.**

CLYDE E WILLIAMS 3  
SAL  
& WELL LOCATION  
SWNE S34-T2S-R64W

PROJECT NO. E12118.EC  
TOPOGRAPHIC MAP  
FIGURE 1

December 8, 2014

Great Western Operating Company, LLC  
1801 Broadway, Suite 500  
Denver, Colorado 80202

Attention: Mr. Scot A. Donato, EH&S/Regulatory Manager

Subject: Clyde E Williams #3 Production Site  
Impacted Soil Removal and Excavation Soil Sampling  
Weld County, Colorado  
Project Number E13536.E2

Dear Mr. Donato:

As requested, A. G. Wassenaar, Inc. (AGW) documented excavation of petroleum-impacted soils and conducted confirmation soil sampling at the Clyde E Williams #3 production site operated by Great Western Operating Company, LLC (GWOC). This letter summarizes the project activities and analytical results.

#### **Site Characteristics**

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The subject site is located in an agricultural area approximately 5 miles east of Denver International Airport in Adams County, Colorado. It is in the southwest ¼ of the northeast ¼ of Section 34, Township 2 South, Range 64 West. The ground surface is generally level, with a slight gradient to the south.

#### **Excavation Oversight and Soil Sampling Activities**

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*September 12, 2013*

At GWOC's request, AGW visited the site on September 12, 2013, following the identification of visibly impacted soils beneath a produced water vessel. AGW collected four soil samples for field evaluation and laboratory analysis. Sample CEW-3-1 was collected from the base of the excavation, approximately 12 feet below ground surface (bgs), beneath the location of the former produced water vessel. Sample CEW3-3 was collected approximately 14 feet bgs in the same location. Soil samples CEW3-4 and CEW3-8 were collected from test pits excavated 25 feet northwest and 21 feet north of the produced water vessel, respectively. During this project, AGW followed sampling procedures, equipment decontamination methods, and chain-of-custody procedures in general accordance with U. S. Environmental Protection Agency (EPA) guidelines.

On the day of collection, the selected samples were submitted to Origins Laboratory, Inc. (Origins) in Denver, Colorado for analysis. Origins analyzed each submitted soil sample for gasoline range organics (GRO) and diesel range organics (DRO) by EPA Method 8015C. In accordance with requirements of the Colorado Oil and Gas Conservation Commission (COGCC),

Clyde E Williams #3 Production Site, Adams County, Colorado  
Weld County, Colorado  
Project Number E13536.EC  
December 8, 2014  
Page 2

the GRO and DRO values were added together to obtain the total petroleum hydrocarbon (TPH) concentration for comparison to the COGCC Table 910-1 TPH concentration.

Based on the results of the September 12, 2013 soil sampling activities, sample CEW3-1 contained a TPH concentration of 8,550 parts per million (ppm), which is greater than the COGCC Table 910-1 concentration of 500 ppm. Soil sample CEW3-3 contained a TPH concentration of 10,820 ppm. The soil samples collected from the two test pits to the northwest and north did not contain detectable concentrations of TPH.

The soil sample results are depicted on Figure 1 in Attachment B, and included in Table 1 in Attachment C. The laboratory analytical report is included in Attachment D.

In accordance with their requirements, on September 6, 2013, GWOC submitted a Form 19 Spill/Release Report to the COGCC. A copy is included in Attachment A.

#### *October 8, 2014*

On October 8, 2014, AGW was onsite during excavation by Mountain Main Oilfield Services, LLC (Mountain Man) of approximately 300 cubic yards of soil exhibiting staining and odors. The impacted soils were trucked to Waste Management's Conservation Services, Inc. landfill in Bennett, Colorado for disposal. The maximum depth of the excavation was approximately 13 feet bgs. Ground water was not encountered in the excavation.

Following excavation, AGW collected five soil samples for field evaluation and laboratory analysis. Soil samples CEW3-North, CEW3-East, CEW3-South, and CEW3-West were collected from the excavation cavity walls, and soil sample CEW3-10 was collected from the base of the excavation at approximately 13 feet bgs.

On the day of collection, the selected samples were submitted to Origins for analysis. Origins analyzed each submitted soil sample for GRO and DRO by EPA Method 8015C, for electrical conductivity (EC) by EPA Method 120.1, and for pH by EPA Method 9045D.

Based on the October 8, 2014 sampling results, the soil samples collected from all four walls of the excavation did not contain TPH, EC, or pH values greater than Table 910-1 concentrations. The soil sample collected from the base of the excavation at 13 feet bgs contained a TPH concentration of 10,580 ppm.

The sample results are depicted on Figure 1 in Attachment B, and included in Table 1 in Attachment C. The laboratory analytical report is included in Attachment D.

*October 27, 2014*

On October 27, 2014, AGW was onsite during additional excavation by Mountain Man of approximately 100 additional cubic yards of soil from the base of the existing excavation, to a depth of approximately 20 feet bgs. The impacted soils were trucked to Waste Management's Conservation Services, Inc. landfill in Bennett, Colorado for disposal.

AGW collected a confirmation soil sample, designated SS-Clyde3-Base, from the base of the expanded excavation. On the day of collection, the sample was submitted to Origins for analysis. Origins analyzed the soil sample for GRO and DRO by EPA Method 8015C, for EC by EPA Method 120.1, and for pH by EPA Method 9045D.

Based on the October 27, 2014 sampling results, the soil sample collected from the base of the expanded excavation did not contain TPH, EC, or pH values greater than Table 910-1 concentrations.

The soil sample results are depicted on Figure 1 in Attachment B, and included in Table 1 in Attachment C. The laboratory analytical report is included in Attachment D.

To enhance remediation, approximately 220 pounds of an activated carbon and oxygen releasing remediation compound called COGAC (manufactured by Remington Technologies of Loveland, Colorado) was placed at the base of the excavation cavity prior to backfilling.

### **Conclusions and Recommendations**

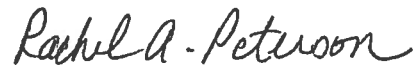
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Based on the soil analytical results obtained during September 2013 and October 2014, impacted soils at the Clyde E Williams #3 production site were present in the vicinity of a former produced water vessel. Approximately 400 cubic yards of impacted soils have been excavated. Four confirmation soil samples from the walls of the excavation and a soil sample from the base of the excavation did not contain TPH, EC, or pH values greater than Table 910-1 concentrations. Based on the analytical results, the impacted soils have been removed from the subsurface. AGW recommends that GWOC request closure for this project from the COGCC.

Clyde E Williams #3 Production Site, Adams County, Colorado  
Weld County, Colorado  
Project Number E13536.EC  
December 8, 2014  
Page 4

Thank you for the opportunity to assist you with this project. If you have any questions or require further information, please call us at (303) 759-8373.

Sincerely,  
A. G. WASSENAAR, INC.

A handwritten signature in cursive script that reads "Rachel A. Peterson". The signature is written in black ink and is positioned above a horizontal line.

Rachel A. Peterson, P.G.  
Project Manager

RAP/dd  
Attachments

**ATTACHMENT A**

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**COGCC FORM 19**



**State of Colorado  
Oil and Gas Conservation Commission**

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

## SPILL/RELEASE REPORT

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

Spill report taken by:

FACILITY ID:

### OPERATOR INFORMATION

Name of Operator: Great Western Operating Company, LLC OGCC Operator No: 10110  
 Address: 1700 Broadway, Suite 650  
 City: Denver State: Spill/Release Zip: 80290  
 Contact Person: Scot Donato, Environmental Health and Safety / Regulatory Manager

Phone Numbers  
 No: (303) 398-0302  
 Fax: (866) 742-1784  
 E-Mail: sdonato@gwogco.com

### DESCRIPTION OF SPILL OR RELEASE

Date of Incident: <u>historical release</u> Facility Name & No.: <u>WILLIAMS, CLYDE JR. #3</u>	County: <u>Adams</u>
Type of Facility (well, tank battery, flow line, pit): <u>production facility</u>	QtrQtr: <u>SWNE</u> Section: <u>34</u>
Well Name and Number: <u>WILLIAMS, CLYDE JR. #3</u>	Township: <u>2S</u> Range: <u>64W</u>
API Number: <u>05-001-07734</u>	Meridian: <u>6th</u>
Specify volume spilled and recovered (in bbls) for the following materials: historical release, volume unknown	
Oil spilled: <u>N/A</u> Oil recov'd: <u>N/A</u> Water spilled: <u>N/A</u> Water recov'd: <u>N/A</u> Other spilled: <u>N/A</u> Other recov'd: <u>N/A</u>	
Ground Water impacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Surface Water impacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Contained within berm? <input type="checkbox"/> Yes <input type="checkbox"/> No <u>N/A</u>	Area and vertical extent of spill: <u>undefined</u> <u>x</u>
Current land use: <u>Production</u>	Weather conditions: <u>N/A</u>
Soil/geology description: <u>Weld-Deertrail complex, 0 to 3 percent slopes</u>	
IF LESS THAN A MILE, report distance IN FEET to nearest.... Surface water: <u>0.40 miles</u> wetlands: <u>N/A</u> buildings: <u>0.10 mile</u>	
Livestock: <u>within 1 mile</u> water wells: <u>&lt;0.10 mile</u> Depth to shallowest ground water: <u>unknown</u>	
Cause of spill (e.g., equipment failure, human error, etc.): <u>equipment failure, historical release</u> Detailed description of the spill/release incident:	
Historical release of produced water. Release was discovered during cleanup of small (<1 bbl) release from line leak.	

### CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered): Limited excavation and stockpiling of visibly impacted soils

Describe any emergency pits constructed: None

How was the extent of contamination determined: Extent of impact will be determined during excavation activities

Further remediation activities proposed (attach separate sheet if needed): Form 27 will be submitted before further remediation activities

Describe measures taken to prevent problem from reoccurring: site reclamation, equipment removal

### OTHER NOTIFICATIONS

List the parties and agencies notified (County, BLM, EPA, DOT, Local Emergency Planning Coordinator or other).

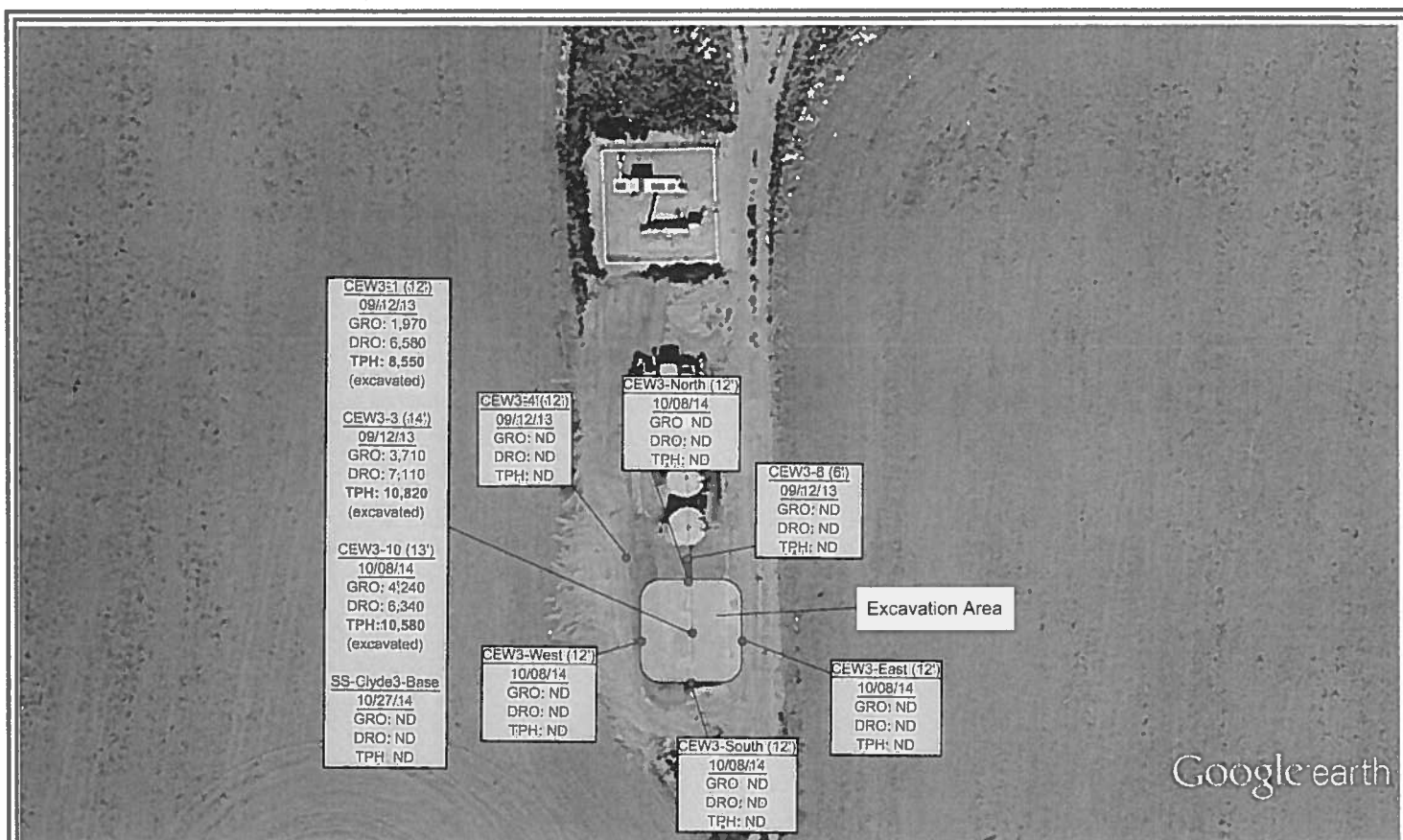
Date	Agency	Contact	Phone	Response

Spill/Release Tracking No: \_\_\_\_\_

**ATTACHMENT B**

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**DIAGRAM**



### LEGEND

- Soil Sample Name (depth in feet)  
date of collection

GRO: Gasoline Range Organics  
DRO: Diesel Range Organics  
TPH: Total Petroleum Hydrocarbons (GRO + DRO)  
ND: Not detected above laboratory detection limits

pH and Specific Conductivity Results are not depicted; all pH and EC results were less than COGCC Table 910-1 concentrations  
Soil concentrations are in milligrams per kilogram (mg/kg)  
Concentrations in **BOLD** exceed applicable COGCC Table 910-1 concentrations



Approximate Scale: 1" = 40'

**A.G. WASSENAAR** | **INC.**

GEOTECHNICAL • ENVIRONMENTAL  
CONSULTANTS

Soil Sampling Analytical Results  
Clyde E Williams #3 Production Site  
Weld County, Colorado  
September 2013 and October 2014  
AGW Project Number: E13536.EC  
Figure 1

**ATTACHMENT C**

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**SOIL SAMPLE ANALYTICAL RESULTS**

<u>Soil Sample</u>	<u>Date of Sample Collection</u>	<u>Depth of Collection (feet bgs)</u>	<u>GRO</u>	<u>DRO</u>	<u>TPH</u> (GRO+DRO)	<u>EC</u>	<u>pH</u>	<u>Disposition of impacted soil</u>
CEW3-1	09/12/13	12	1,970	6,580	<b>8,550</b>	NA	NA	Excavated and disposed
CEW3-3	09/12/13	14	3,710	7,110	<b>10,820</b>	NA	NA	Excavated and disposed
CEW3-4	09/12/13	12	ND	ND	ND	NA	NA	N/A, not impacted
CEW3-9	09/12/13	6	ND	ND	ND	NA	NA	N/A, not impacted
CEW3-10	10/08/14	13	4,240	6,340	<b>10,580</b>	NA	NA	Excavated and disposed
CEW3-North	10/08/14	12	ND	ND	ND	0.233	8.08	N/A, not impacted
CEW3-East	10/08/14	12	ND	ND	ND	0.324	8.11	IP
CEW3-South	10/08/14	12	ND	ND	ND	0.670	8.10	N/A, not impacted
CEW3-West	10/08/14	12	ND	ND	ND	0.232	8.10	N/A, not impacted
SS-Clyde3-Base	10/27/14	20	ND	ND	ND	0.655	7.50	N/A, not impacted
COGCC Table 910-1 Concentrations					<b>500</b>	<b>&lt;4</b>	<b>6-9</b>	

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

TPH: Total Petroleum Hydrocarbons. In accordance with requirements of the COGCC, the GRO and DRO values were added together to obtain the TPH concentration

EC: Electrical Conductivity

bgs: below ground surface

GRO/DRO/TPH concentrations are in milligrams per kilogram (mg/kg)

EC concentrations are in milli mhos per centimeter (mmhos/cm)

IP: left in place

NA: Not analyzed

N/A: Not Applicable

Values in **BOLD** exceed applicable COGCC Table 910-1 concentrations

**ATTACHMENT D**

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**LABORATORY ANALYTICAL RESULTS**



September 19, 2013

A.G. Wassenaar

Rachel Peterson

2180 South Ivanhoe Street - Suite 5

Denver

CO 80222

**Project Name - Clude E. Williams 3**

**Project Number - E13536.E2**

Attached are you analytical results for Clude E. Williams 3 received by Origins Laboratory, Inc. September 16, 2013. This project is associated with Origins project number X309056-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEW3-1	X309056-01	Soil	September 12, 2013 11:00	09/16/2013 15:45
CEW3-3	X309056-02	Soil	September 12, 2013 11:30	09/16/2013 15:45
CEW3-4	X309056-03	Soil	September 12, 2013 12:00	09/16/2013 15:45
CEW3-8	X309056-04	Soil	September 12, 2013 13:15	09/16/2013 15:45

Origins Laboratory, Inc.



Noelle E Doyle, President

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

www.originslaboratory.com

page 1 of 1

X309056

**ORIGINS**  
LABORATORY, INC

Client: A.G. Wassenaar, Inc.  
Address: 2180 S. Ivanhoe St.  
Denver CO 80222  
Telephone Number: 303.759.8373  
Email Address: petersonr@agwassenaar.com

Project Manager: Rachel Peterson  
Project Name: Clude E. Williams 3  
Project Number: E13536.E2  
Samples Collected By: R. Peterson

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil		
CEW3-1	9/16/13	1:12	1	✓							1
CEW3-3	9/16/13	11:30a	1	✓							2
CEW3-4	9/16/13	12:00	1	✓							3
CEW3-8	9/16/13	5:1	1	✓							4
											5
											6
											7
											8
											9
											10
Requisitioned By: Rachel C. Peterson	Date: 9/16/13	Time: 15:00P		Received By: Rachel Peterson	Date: 9/16/13	Time: 15:00P		Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard			
Requisitioned By: Rachel Peterson	Date: 9/16/13	Time: 3:15PM		Received By: Rachel Peterson	Date: 9/16/13	Time: 15:45					

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Noelle E Doyle, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: X309056

Client: A.G. Wassenaar

Client Project ID: Clude E. Williams 3

Checklist Completed by: Jeff Smith

Shipped Via: H/D  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 9/16/13 16:41

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

Cooler Number/Temperature: 1-4 °C 1 °C 1 °C (Describe) \_\_\_\_\_ °C

Thermometer ID: T002

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date, time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: Project Manager

Date/Time Reviewed: 9-19-13 1330

Origins Laboratory, Inc.

Noelle E Doyle, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

CEW3-1

9/12/2013 11:00:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.  
X309056-01 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	1970	50.0	mg/kg	1	3117006	09/17/2013	09/18/2013
Diesel (C10-C28)	6580	50.0	"	"	"	"	"
Surrogate: o-Terphenyl	89.4 %	59-131			"	"	"

Origins Laboratory, Inc.



Noelle E Doyle, President

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A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

CEW3-3

9/12/2013 11:30:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.  
X309056-02 (Soil)

## GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	3710	50.0	mg/kg	1	3117006	09/17/2013	09/18/2013
Diesel (C10-C28)	7110	50.0	"	"	"	"	"
Surrogate: o-Terphenyl	85.6 %	59-131			"	"	"

Origins Laboratory, Inc.



Noelle E Doyle, President

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A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

CEW3-4

9/12/2013 12:00:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.  
X309056-03 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	3117006	09/17/2013	09/18/2013
Diesel (C10-C28)	ND	50.0	"	"	"	"	"
Surrogate: o-Terphenyl	105 %	59-131			"	"	"

Origins Laboratory, Inc.



Noelle E Doyle, President

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A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

CEW3-8

9/12/2013 1:15:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.  
X309056-04 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	3117006	09/17/2013	09/18/2013
Diesel (C10-C28)	ND	50.0	"	"	"	"	"
Surrogate: o-Terphenyl	98.5 %	59-131			"	"	"

Origins Laboratory, Inc.



Noelle E Doyle, President

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A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

**Extractable Petroleum Hydrocarbons by 8015M - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 3I17006 - EPA 3580</b>										
<b>Blank (3I17006-BLK1)</b>					Prepared: 09/17/2013 Analyzed: 09/18/2013					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Surrogate: o-Terphenyl	50		g	50.0		101	59-131			
<b>LCS (3I17006-BS1)</b>					Prepared: 09/17/2013 Analyzed: 09/18/2013					
Gasoline (C6-C10)	1070	50.0	mg/kg	1000		107	59-133			
Diesel (C10-C28)	1010	50.0	"	1000		101	64-121			
Surrogate: o-Terphenyl	50		g	50.0		100	59-131			
<b>Matrix Spike (3I17006-MS1)</b>					Source: X309050-01 Prepared: 09/17/2013 Analyzed: 09/18/2013					
Gasoline (C6-C10)	1040	50.0	mg/kg	1000	ND	104	57-139			
Diesel (C10-C28)	978	50.0	"	1000	22.4	95.6	53-125			
Surrogate: o-Terphenyl	43		g	50.0		85.6	59-131			
<b>Matrix Spike Dup (3I17006-MSD1)</b>					Source: X309050-01 Prepared: 09/17/2013 Analyzed: 09/18/2013					
Gasoline (C6-C10)	1020	50.0	mg/kg	1000	ND	102	57-139	1.89	20	
Diesel (C10-C28)	981	50.0	"	1000	22.4	95.9	53-125	0.324	20	
Surrogate: o-Terphenyl	47		g	50.0		94.3	59-131			

Origins Laboratory, Inc.



Noelle E Doyle, President

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A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clude E. Williams 3

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**Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit  
RPD Relative Percent Difference

Origins Laboratory, Inc.



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Noelle E Doyle, President

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October 10, 2014

A.G. Wassenaar

Rachel Peterson

2180 South Ivanhoe Street - Suite 5

Denver

CO 80222

**Project Name - Clyde Williams 3**

**Project Number - E13536.E2**

Attached are your analytical results for Clyde Williams 3 received by Origins Laboratory, Inc. October 09, 2014. This project is associated with Origins project number X410083-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEW3-East	X410083-01	Soil	October 8, 2014 14:50	10/09/2014 08:00
CEW3-South	X410083-02	Soil	October 8, 2014 15:10	10/09/2014 08:00
CEW3-10	X410083-03	Soil	October 8, 2014 15:30	10/09/2014 08:00
CEW3-West	X410083-04	Soil	October 8, 2014 15:45	10/09/2014 08:00
CEW3-North	X410083-05	Soil	October 8, 2014 16:20	10/09/2014 08:00

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

**ORIGINS**  
LABORATORY, INC

X410083

Client: A.G. Wassenaar, Inc.  
Address: 2800 S. I. St.  
Denver CO 80222  
Telephone Number: 303 757 8373  
Email Address: r.peterson@agwassenaar.com

Project Manager: Rachel Peterson  
Project Name: Clyde Williams 3  
Project Number: E13536.E2  
Samples Collected By: R. Peterson

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	As Summed Container #			Other
CEW3-Exit	10/8/14	1450	2	✓					✓			1	
CEW3-South		1:10	2	✓					✓			2	
CEW3-10		1530	2	✓					✓			3	
CEW3-well		1545	2	✓					✓			4	
C. L. North		11:20	2	✓					✓			5	
												6	
												7	
												8	
												9	
												10	

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
R. Peterson	10/9/14	8000		10/9/14	8:00	Same Day <input type="checkbox"/> 24 Hr <input checked="" type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: X410083

Client: A.G. Wassenaar

Client Project ID: Clyde Williams 3

Checklist Completed by: Jeff Smith

Shipped Via Pick up  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 10/9/14

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

Cooler Number/Temperature: 113 °C 1 °C 1 °C (Describe)

Thermometer ID: 1003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours, present <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PH
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – Is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) / (pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> -NaOH, ZnAc-NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by Jeff Smith (Project Manager)

10-9-14  
Date/Time Reviewed

Origins Laboratory, Inc.

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Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

CEW3-East  
10/8/2014 2:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X410083-01 (Soil)

### GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4J09009	10/09/2014	10/10/2014
Diesel (C10-C28)	ND	50.0	"	"	"	"	"

Surrogate: o-Terphenyl	98.9 %	59-131			"	"	"
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### pH in Soil by EPA 9045D

pH	8.11		pH Units	1	4J10006	10/10/2014	10/10/2014
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### Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.324		mmhos/cm	"	4J09014	10/09/2014	10/10/2014
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Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

**CEW3-South**  
**10/8/2014 3:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X410083-02 (Soil)**

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4J09009	10/09/2014	10/10/2014
Diesel (C10-C28)	ND	50.0	"	"	"	"	"

Surrogate: o-Terphenyl	112 %	59-131			"	"	"
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**pH in Soil by EPA 9045D**

pH	8.10		pH Units	1	4J10006	10/10/2014	10/10/2014
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.670		mmhos/cm	"	4J09014	10/09/2014	10/10/2014
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Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

CEW3-10  
10/8/2014 3:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X410083-03 (Soil)

### GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	4240	50.0	mg/kg	1	4J09009	10/09/2014	10/10/2014	
Diesel (C10-C28)	6340	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	174 %	59-131			"	"	"	S-02

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

**CEW3-West**  
**10/8/2014 3:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X410083-04 (Soil)**

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4J09009	10/09/2014	10/10/2014
Diesel (C10-C28)	ND	50.0	"	"	"	"	"

Surrogate: o-Terphenyl	80.9 %	59-131			"	"	"
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**pH in Soil by EPA 9045D**

pH	8.02		pH Units	1	4J10006	10/10/2014	10/10/2014
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.534		mmhos/cm	"	4J09014	10/09/2014	10/10/2014
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Origins Laboratory, Inc.



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Noelle Doyle Mathis, President



A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

CEW3-North  
10/8/2014 4:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X410083-05 (Soil)

### GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4J09009	10/09/2014	10/10/2014
Diesel (C10-C28)	ND	50.0	"	"	"	"	"

Surrogate: o-Terphenyl	78.2 %	59-131			"	"	"
------------------------	--------	--------	--	--	---	---	---

### pH in Soil by EPA 9045D

pH	8.08		pH Units	1	4J10006	10/10/2014	10/10/2014
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### Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.233		mmhos/cm	"	4J09014	10/09/2014	10/10/2014
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Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

**Extractable Petroleum Hydrocarbons by 8015M - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4J09009 - EPA 3580</b>										
<b>Blank (4J09009-BLK1)</b>					Prepared: 10/09/2014 Analyzed: 10/09/2014					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Surrogate: o-Terphenyl	47		g	50.0		94.4	59-131			
<b>LCS (4J09009-BS1)</b>					Prepared: 10/09/2014 Analyzed: 10/09/2014					
Gasoline (C6-C10)	761	50.0	mg/kg	1000		76.1	59-133			
Diesel (C10-C28)	894	50.0	"	1000		89.4	64-121			
Surrogate: o-Terphenyl	37		g	50.0		73.8	59-131			
<b>Matrix Spike (4J09009-MS1)</b>					<b>Source: X410079-01</b>		Prepared: 10/09/2014 Analyzed: 10/09/2014			
Gasoline (C6-C10)	934	50.0	mg/kg	1000	ND	93.4	57-139			
Diesel (C10-C28)	1050	50.0	"	1000	47.9	99.9	53-125			
Surrogate: o-Terphenyl	42		g	50.0		84.8	59-131			
<b>Matrix Spike Dup (4J09009-MSD1)</b>					<b>Source: X410079-01</b>		Prepared: 10/09/2014 Analyzed: 10/09/2014			
Gasoline (C6-C10)	774	50.0	mg/kg	1000	ND	77.4	57-139	18.7	20	
Diesel (C10-C28)	895	50.0	"	1000	47.9	84.7	53-125	15.7	20	
Surrogate: o-Terphenyl	35		g	50.0		69.2	59-131			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

**Classical Chemistry Parameters - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4J09014 - NO PREP</b>										
<b>Blank (4J09014-BLK1)</b>					Prepared: 10/09/2014 Analyzed: 10/10/2014					
Specific Conductance (EC)	0.00170		mmhos/cm							
<b>Duplicate (4J09014-DUP1)</b>					Source: X410083-05 Prepared: 10/09/2014 Analyzed: 10/10/2014					
Specific Conductance (EC)	0.228		mmhos/cm		0.233			2.17	25	
<b>Batch 4J10006 - NO PREP</b>										
<b>Duplicate (4J10006-DUP1)</b>					Source: X410083-05 Prepared: 10/10/2014 Analyzed: 10/10/2014					
pH	8.00		pH Units		8.08			1.03	25	

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.E2  
Project: Clyde Williams 3

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**Notes and Definitions**

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

---

Noelle Doyle Mathis, President



October 31, 2014

A.G. Wassenaar

Rachel Peterson

2180 South Ivanhoe Street - Suite 5

Denver

CO 80222

Project Name - E13536.EC

Project Number - E13536.EC

Attached are your analytical results for E13536.EC received by Origins Laboratory, Inc. October 27, 2014. This project is associated with Origins project number X410298-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

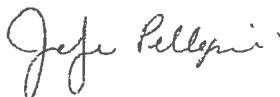
A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.EC  
Project: E13536.EC

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-CLYDE3-Base	X410298-01	Soil	October 27, 2014 9:15	10/27/2014 13:38

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

A.G. Wassenaar  
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Rachel Peterson  
Project Number: E13536.EC  
Project: E13536.EC

www.originslaboratory.com

X410298

ORIGINS  
LABORATORY, INC

page of

Client: A.G. WASSenaar, LLC Project Manager/Send Report To: Rachel Peterson  
Address: 2180 S IVANHOE ST AS Email Address: PETerson@AGWELL.com  
DENVER CO 80222 Project Name/Number: E13536.EC  
Telephone Number: 303-759-8373 Samples Collected By: David Stamowski

5.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summ #	Other		
SS-CLYDE-3-BASE	10/27/14	9:15	1	X					X			680/020/14/EC	1
													2
													3
													4
													5
													6
													7
													8
													9
													10
Requisitioned By: <i>[Signature]</i>	Date: 10/27/14	Time: 1:38		Received By: <i>[Signature]</i>					Date: 10/27/14			Time: 1330	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/>
Requisitioned By:	Date:	Time:		Received By:					Date:			Time:	

Date Results Needed:

Comments:

1 725 EIK Place

Origins Laboratory, Inc.

*Jen Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President

A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.EC  
Project: E13536.EC

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: X410298

Client: A.G. Wassenaar

Client Project ID: E13536.EC

Checklist Completed by: Jeff Smith

Shipped Via: HTD

Date/time completed: 10/27/12

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

Cooler Number/Temperature: 1 / 0.9 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 8°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PH
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> / ( pH >10 for samples preserved with NaAsO <sub>2</sub> -NaOH, ZnAc <sup>+</sup> -NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: [Signature] (Project Manager)

10-28-14  
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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Jen Pellegrini For Noelle Doyle Mathis, President



A.G. Wassenaar  
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Denver CO 80222

Rachel Peterson  
Project Number: E13536.EC  
Project: E13536.EC

**SS-CLYDE3-Base**

**10/27/2014 9:15:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X410298-01 (Soil)**

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4J30001	10/29/2014	10/30/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	94.1 %	59-131			"	"	"	
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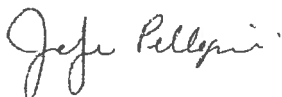
**pH in Soil by EPA 9045D**

pH	7.50		pH Units	1	4J28006	10/28/2014	10/28/2014	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.655		mmhos/cm	"	4J28007	10/28/2014	10/29/2014	
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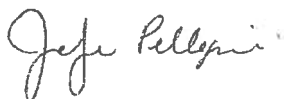
A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
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Rachel Peterson  
Project Number: E13536.EC  
Project: E13536.EC

**Extractable Petroleum Hydrocarbons by 8015M - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4J30001 - EPA 3580</b>										
<b>Blank (4J30001-BLK1)</b>					Prepared: 10/29/2014 Analyzed: 10/30/2014					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Surrogate: o-Terphenyl	54		g	50.0		109	59-131			
<b>LCS (4J30001-BS1)</b>					Prepared: 10/29/2014 Analyzed: 10/30/2014					
Gasoline (C6-C10)	917	50.0	mg/kg	1000		91.7	59-133			
Diesel (C10-C28)	1100	50.0	"	1000		110	64-121			
Surrogate: o-Terphenyl	48		g	50.0		96.3	59-131			
<b>Matrix Spike (4J30001-MS1)</b>					Source: X410298-01 Prepared: 10/29/2014 Analyzed: 10/30/2014					
Gasoline (C6-C10)	913	50.0	mg/kg	1000	ND	91.3	57-139			
Diesel (C10-C28)	1080	50.0	"	1000	ND	108	53-125			
Surrogate: o-Terphenyl	45		g	50.0		89.9	59-131			
<b>Matrix Spike Dup (4J30001-MSD1)</b>					Source: X410298-01 Prepared: 10/29/2014 Analyzed: 10/30/2014					
Gasoline (C6-C10)	971	50.0	mg/kg	1000	ND	97.1	57-139	6.13	20	
Diesel (C10-C28)	1130	50.0	"	1000	ND	113	53-125	4.27	20	
Surrogate: o-Terphenyl	47		g	50.0		93.5	59-131			

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Jen Pellegrini For Noelle Doyle Mathis, President

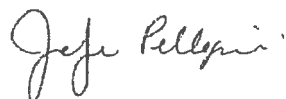
A.G. Wassenaar  
2180 South Ivanhoe Street - Suite 5  
Denver CO 80222

Rachel Peterson  
Project Number: E13536.EC  
Project: E13536.EC

## Classical Chemistry Parameters - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4J28006 - NO PREP</b>										
<b>Duplicate (4J28006-DUP1)</b>		<b>Source: X410298-01</b>			Prepared: 10/28/2014 Analyzed: 10/28/2014					
pH	7.59		pH Units		7.50			1.26	25	
<b>Batch 4J28007 - NO PREP</b>										
<b>Blank (4J28007-BLK1)</b>		Prepared: 10/28/2014 Analyzed: 10/29/2014								
Specific Conductance (EC)	0.00200		mmhos/cm							
<b>Duplicate (4J28007-DUP1)</b>		<b>Source: X410298-01</b>			Prepared: 10/28/2014 Analyzed: 10/29/2014					
Specific Conductance (EC)	0.669		mmhos/cm		0.655			2.11	25	

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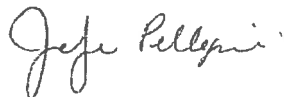
**Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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