



10/20/14

Technical Report for

---

Diamond Operating Inc.

IDEA Skim Pit

**Remediation #: 8252**  
**Soil sample tests**  
**Initial excavation**

Accutest Job Number: D63480

Sampling Date: 10/15/14

---

Report to:

Diamond Operating Inc.  
6666 Gunpark Drive Suite 200  
Boulder, CO 80301  
davep@flatironenergy.com

ATTN: Dave Peterson

Total number of pages in report: 23



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman  
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.

# Table of Contents

Sections:



-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 3: Case Narrative/Conformance Summary .....</b>	<b>5</b>
<b>Section 4: Sample Results .....</b>	<b>6</b>
<b>4.1: D63480-1: IDEA-EAST .....</b>	<b>7</b>
<b>4.2: D63480-2: IDEA-WEST .....</b>	<b>9</b>
<b>4.3: D63480-3: IDEA-EXCAVATED SOIL .....</b>	<b>11</b>
<b>Section 5: Misc. Forms .....</b>	<b>13</b>
<b>5.1: Chain of Custody .....</b>	<b>14</b>
<b>Section 6: GC Volatiles - QC Data Summaries .....</b>	<b>16</b>
<b>6.1: Method Blank Summary .....</b>	<b>17</b>
<b>6.2: Blank Spike Summary .....</b>	<b>18</b>
<b>6.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>19</b>
<b>Section 7: GC Semi-volatiles - QC Data Summaries .....</b>	<b>20</b>
<b>7.1: Method Blank Summary .....</b>	<b>21</b>
<b>7.2: Blank Spike Summary .....</b>	<b>22</b>
<b>7.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>23</b>



### Sample Summary

Diamond Operating Inc.

Job No: D63480

IDEA Skim Pit

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D63480-1	10/15/14	09:30 DP	10/15/14	SO	Soil	IDEA-EAST
D63480-2	10/15/14	09:30 DP	10/15/14	SO	Soil	IDEA-WEST
D63480-3	10/15/14	09:30 DP	10/15/14	SO	Soil	IDEA-EXCAVATED SOIL

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



### CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** Diamond Operating Inc.

**Job No** D63480

**Site:** IDEA Skim Pit

**Report Date** 10/20/2014 4:47:33 P

On 10/15/2014, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 20 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D63480 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

#### Volatiles by GC By Method SW846 8015B

<b>Matrix:</b> SO	<b>Batch ID:</b> GGB1464
-------------------	--------------------------

- \* All samples were analyzed within the recommended method holding time.
- \* All method blanks for this batch meet method specific criteria.
- \* Sample(s) D63195-1MS, D63195-1MSD were used as the QC samples indicated.

#### Extractables by GC By Method SW846-8015B

<b>Matrix:</b> SO	<b>Batch ID:</b> OP10818
-------------------	--------------------------

- \* All samples were extracted and analyzed within the recommended method holding time.
- \* All method blanks for this batch meet method specific criteria.
- \* Sample(s) D63195-1MS, D63195-1MSD were used as the QC samples indicated.

#### Wet Chemistry By Method SM2540G-2011 M

<b>Matrix:</b> SO	<b>Batch ID:</b> GN26973
-------------------	--------------------------

- \* The data for SM2540G-2011 M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## Summary of Hits

Job Number: D63480  
Account: Diamond Operating Inc.  
Project: IDEA Skim Pit  
Collected: 10/15/14

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D63480-1	IDEA-EAST					
TPH-DRO (C10-C28)		33.4	7.5	5.6	mg/kg	SW846-8015B
D63480-2	IDEA-WEST					
TPH-DRO (C10-C28)		217	7.7	5.8	mg/kg	SW846-8015B
D63480-3	IDEA-EXCAVATED SOIL					
TPH-GRO (C6-C10)		101	13	6.3	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		6120	110	85	mg/kg	SW846-8015B

**Sample Results**

---

**Report of Analysis**

---

### Report of Analysis

<b>Client Sample ID:</b> IDEA-FAST		<b>Date Sampled:</b> 10/15/14
<b>Lab Sample ID:</b> D63480-1		<b>Date Received:</b> 10/15/14
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 89.2
<b>Method:</b> SW846 8015B		
<b>Project:</b> IDEA Skim Pit		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB27039.D	1	10/16/14	EP	n/a	n/a	GGB1464
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%		

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> IDEA-EAST	
<b>Lab Sample ID:</b> D63480-1	<b>Date Sampled:</b> 10/15/14
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 10/15/14
<b>Method:</b> SW846-8015B SW846 3546	<b>Percent Solids:</b> 89.2
<b>Project:</b> IDEA Skim Pit	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18210.D	1	10/19/14	JS	10/16/14	OP10818	GFI1009
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	33.4	7.5	5.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	69%		20-130%		

ND = Not detected      MDL = Method Detection Limit  
 RI = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

4.1  
4

Report of Analysis

<b>Client Sample ID:</b> IDEA-WEST		<b>Date Sampled:</b> 10/15/14
<b>Lab Sample ID:</b> D63480-2		<b>Date Received:</b> 10/15/14
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 86.6
<b>Method:</b> SW846 8015B		
<b>Project:</b> IDEA Skim Pit		

4.2  
4

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB27040.D	1	10/16/14	EP	n/a	n/a	GGB1464
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%		

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

Report of Analysis

<b>Client Sample ID:</b> IDEA-WEST		<b>Date Sampled:</b> 10/15/14
<b>Lab Sample ID:</b> D63480-2		<b>Date Received:</b> 10/15/14
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 86.6
<b>Method:</b> SW846-8015B SW846 3546		
<b>Project:</b> IDEA Skim Pit		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18212.D	1	10/19/14	JS	10/16/14	OP10818	GFI1009
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	217	7.7	5.8	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	61%		20-130%		

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

4.2  
4

Report of Analysis

<b>Client Sample ID:</b> IDEA-EXCAVATED SOIL	
<b>Lab Sample ID:</b> D63480-3	<b>Date Sampled:</b> 10/15/14
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 10/15/14
<b>Method:</b> SW846 8015B	<b>Percent Solids:</b> 88.0
<b>Project:</b> IDEA Skim Pit	

4.3  
4

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB27041.D	1	10/16/14	EP	n/a	n/a	GGB1464
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	101	13	6.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	115%		60-140%		

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

<b>Client Sample ID:</b>	IDEA-EXCAVATED SOIL	<b>Date Sampled:</b>	10/15/14
<b>Lab Sample ID:</b>	D63480-3	<b>Date Received:</b>	10/15/14
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.0
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	IDEA Skim Pit		

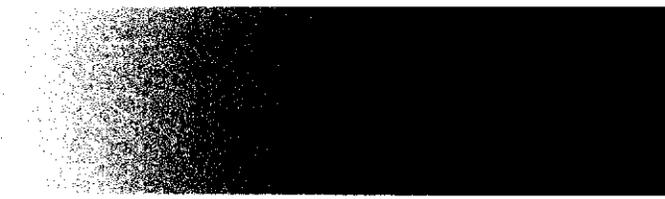
4.3  
4

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18214.D	10	10/20/14	JS	10/16/14	OP10818	GFI1009
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.5 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	6120	110	85	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	71%		20-130%		

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound



Misc. Forms

---

5

Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Missouri State  
4836 Youngfield Street, White Ridge Co. 60033  
TEL: 303-425-6021 877-737-4521  
FAX: 303-425-6021

FED-EX Tracking # \_\_\_\_\_  
Some Order Control # \_\_\_\_\_  
Account Order # \_\_\_\_\_  
Account Job # **D63480**

Client / Reporting Information		Project Information		Registered Analysts - see 105.17 (200) (b) (3)		Matrix Codes	
Company Name <b>Howard Operating, Inc.</b>	Project Name <b>Idea skin pit closure</b>	Street <b>6100 Gumpark Dr. Suite 200</b>	City <b>Boonville MO 65011</b>	State <b>MO</b>	Zip <b>65011</b>		
Client Contact <b>David Peterson</b>	Client PO# <b>703.517.3399</b>	Client Email <b>davep@flatironenergy.com</b>	Client Phone <b>703.517.3399</b>	Client Fax <b>703.517.3399</b>	Client Address <b>1001 N. Main St. Boonville MO 65011</b>		
Site Address <b>6100 Gumpark Dr. Suite 200</b>	City <b>Boonville MO</b>	State <b>MO</b>	Zip <b>65011</b>	Billing Information (If different from Report to)			
Project Description <b>Idea skin pit closure</b>	MEONR No. #	Date	Time	Sampled by <b>JD</b>	Matrix	# of bottles	
Field ID / Point of Collection	MEONR No. #	Date	Time	Sampled by	Matrix	# of bottles	
<del>1 Idea - East</del>	<del>01/15/14</del>	<del>11:30am</del>	<del>JD</del>	<del>JD</del>	<del>SO</del>	<del>10</del>	<del>X</del>
<del>2 Idea - West</del>	<del>01/15/14</del>	<del>11:30am</del>	<del>JD</del>	<del>JD</del>	<del>SO</del>	<del>10</del>	<del>X</del>
<del>3 Idea - North</del>	<del>01/15/14</del>	<del>11:30am</del>	<del>JD</del>	<del>JD</del>	<del>SO</del>	<del>10</del>	<del>X</del>
<del>4 Idea - South</del>	<del>01/15/14</del>	<del>11:30am</del>	<del>JD</del>	<del>JD</del>	<del>SO</del>	<del>10</del>	<del>X</del>
<del>5 Idea - North</del>	<del>01/15/14</del>	<del>11:30am</del>	<del>JD</del>	<del>JD</del>	<del>SO</del>	<del>10</del>	<del>X</del>
3 Idea - Excavated Soil		11	11	JD	SO	50	X

- DW - Drinking Water
- GW - Ground Water
- WW - Water
- SW - Surface Water
- SO - Soil
- SL - Sludge
- SED - Sediment
- CI - Oil
- LIQ - Other Liquid
- AIR - Air
- SOL - Other Solid
- WP - Wipe
- FB - Field Blank
- EB - Equipment Blank
- RB - Rinse Blank
- TB - Trip Blank

5.1  
**5**

Data Delivery Information		Comments / Special Instructions	
<input type="checkbox"/> Turnaround Time (Business Days) <input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day / 8 Hr <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Emergency & Rush Turnaround available via LCLSS	Approved By (Accutest PM): / Date: _____ _____	<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Commercial "B" - Narrative <input type="checkbox"/> FULLT1 (Level 3+) <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> PDF Commercial "A" = Results Only Commercial "B" = Results + QC Certificate	
Sample Custody must be documented below each time surplus change possession, including courier delivery.			
Requisitioned by: <b>JD</b> Date/Time: <b>10/15/14 14:00</b>	Received By: <b>JD</b> Date/Time: _____	Requisitioned By: _____ Date/Time: _____	Received By: _____ Date/Time: _____
Requisitioned by: _____ Date/Time: _____	Received By: _____ Date/Time: _____	Requisitioned By: _____ Date/Time: _____	Received By: _____ Date/Time: _____
Requisitioned by: _____ Date/Time: _____	Received By: _____ Date/Time: _____	Requisitioned By: _____ Date/Time: _____	Received By: _____ Date/Time: _____
Custody Seal # <b>10</b>		Preserved when applicable <input checked="" type="checkbox"/>	On Ice <input checked="" type="checkbox"/> Cooler Temp. <b>20°C</b>



10/31/14

**Technical Report for**

---

**Diamond Operating Inc.**

IDEA Skim Pit

**Remediation #: 8252**  
**Soil sample tests**  
**Excavation #2**

Accutest Job Number: D63908

Sampling Date: 10/28/14

---

Report to:

Diamond Operating Inc.  
6666 Gunpark Drive Suite 200  
Boulder, CO 80301  
davep@flatironenergy.com

ATTN: Dave Peterson

Total number of pages in report: 23



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman  
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (C000049), ID, NE (C000049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP C000049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.

# Table of Contents

Sections:



<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 3: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 4: Sample Results .....</b>	<b>6</b>
<b>4.1: D63908-1: IDEA-BASE .....</b>	<b>7</b>
<b>4.2: D63908-2: IDEA-NORTH .....</b>	<b>9</b>
<b>4.3: D63908-3: IDEA-SOUTH .....</b>	<b>11</b>
<b>Section 5: Misc. Forms .....</b>	<b>13</b>
<b>5.1: Chain of Custody .....</b>	<b>14</b>
<b>Section 6: GC Volatiles - QC Data Summaries .....</b>	<b>16</b>
<b>6.1: Method Blank Summary .....</b>	<b>17</b>
<b>6.2: Blank Spike Summary .....</b>	<b>18</b>
<b>6.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>19</b>
<b>Section 7: GC Semi-volatiles - QC Data Summaries .....</b>	<b>20</b>
<b>7.1: Method Blank Summary .....</b>	<b>21</b>
<b>7.2: Blank Spike Summary .....</b>	<b>22</b>
<b>7.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>23</b>



### Sample Summary

Diamond Operating Inc.

Job No: D63908

IDEA Skim Pit

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D63908-1	10/28/14	14:00 DP	10/28/14	SO	Soil	IDEA-BASE
D63908-2	10/28/14	14:00 DP	10/28/14	SO	Soil	IDEA-NORTH
D63908-3	10/28/14	14:00 DP	10/28/14	SO	Soil	IDEA-SOUTH

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

**CASE NARRATIVE / CONFORMANCE SUMMARY**

**Client:** Diamond Operating Inc.

**Job No** D63908

**Site:** IDEA Skim Pit

**Report Date** 10/31/2014 5:02:34 P

On 10/28/2014, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 17.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D63908 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

**Volatiles by GC By Method SW846 8015B**

<b>Matrix:</b> SO	<b>Batch ID:</b> GGB1473
-------------------	--------------------------

- \* All samples were analyzed within the recommended method holding time.
- \* All method blanks for this batch meet method specific criteria.
- \* Sample(s) D63908-1MS, D63908-1MSD were used as the QC samples indicated.

**Extractables by GC By Method SW846-8015B**

<b>Matrix:</b> SO	<b>Batch ID:</b> OP10885
-------------------	--------------------------

- \* All samples were extracted and analyzed within the recommended method holding time.
- \* All method blanks for this batch meet method specific criteria.
- \* Sample(s) D63908-3MS, D63908-3MSD were used as the QC samples indicated.
- \* The matrix spike (MS) recovery(s) of TPH-DRO (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- \* The RPD(s) for the MS and MSD recoveries of TPH-DRO (C10-C28) are outside control limits for sample OP10885-MSD. High RPD due to possible sample nonhomogeneity.

**Wet Chemistry By Method SM2540G-2011 M**

<b>Matrix:</b> SO	<b>Batch ID:</b> GN27213
-------------------	--------------------------

- \* The data for SM2540G-2011 M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

# Summary of Hits

Job Number: D63908  
Account: Diamond Operating Inc.  
Project: IDEA Skim Pit  
Collected: 10/28/14

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

D63908-1	IDEA-BASE					
TPH-DRO (C10-C28)		332	7.5	5.6	mg/kg	SW846-8015B
D63908-2	IDEA-NORTH					
TPH-DRO (C10-C28)		602	7.5	5.6	mg/kg	SW846-8015B
D63908-3	IDEA-SOUTH					
TPH-DRO (C10-C28)		343	7.4	5.6	mg/kg	SW846-8015B



Sample Results

---

Report of Analysis

---

## Report of Analysis

<b>Client Sample ID:</b> IDEA-BASE	<b>Date Sampled:</b> 10/28/14
<b>Lab Sample ID:</b> D63908-1	<b>Date Received:</b> 10/28/14
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 88.5
<b>Method:</b> SW846 8015B	
<b>Project:</b> IDEA Skim Pit	

4.1  
**4**

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB27210.D	1	10/30/14	EP	n/a	n/a	GGB1473
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	96%		60-140%		

---

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

Report of Analysis

<b>Client Sample ID:</b> IDEA-BASE		<b>Date Sampled:</b> 10/28/14
<b>Lab Sample ID:</b> D63908-1		<b>Date Received:</b> 10/28/14
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 88.5
<b>Method:</b> SW846-8015B SW846 3546		
<b>Project:</b> IDEA Skim Pit		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18716.D	1	10/29/14	JS	10/29/14	OP10885	GFI1025
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	332	7.5	5.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	78%		20-130%		

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RI = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

4.1  
4

## Report of Analysis

<b>Client Sample ID:</b> IDEA-NORTH	<b>Date Sampled:</b> 10/28/14
<b>Lab Sample ID:</b> D63908-2	<b>Date Received:</b> 10/28/14
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.0
<b>Method:</b> SW846 8015B	
<b>Project:</b> IDEA Skim Pit	

4.2  
4

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB27213.D	1	10/30/14	EP	n/a	n/a	GGB1473
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%		

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

4.2  
4

<b>Client Sample ID:</b> IDEA-NORTH	<b>Date Sampled:</b> 10/28/14
<b>Lab Sample ID:</b> D63908-2	<b>Date Received:</b> 10/28/14
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.0
<b>Method:</b> SW846-8015B SW846 3546	
<b>Project:</b> IDEA Skim Pit	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18718.D	1	10/29/14	JS	10/29/14	OP10885	GFI1025
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	602	7.5	5.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	62%		20-130%		

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

<b>Client Sample ID:</b> IDEA-SOUTH	<b>Date Sampled:</b> 10/28/14
<b>Lab Sample ID:</b> D63908-3	<b>Date Received:</b> 10/28/14
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.0
<b>Method:</b> SW846 8015B	
<b>Project:</b> IDEA Skim Pit	

4.3  
4

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB27214.D	1	10/30/14	EP	n/a	n/a	GGB1473
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPII-GRO (C6-C10)	ND	12	6.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	93%		60-140%		

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

Report of Analysis

<b>Client Sample ID:</b> IDEA-SOUTH		<b>Date Sampled:</b> 10/28/14
<b>Lab Sample ID:</b> D63908-3		<b>Date Received:</b> 10/28/14
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 89.0
<b>Method:</b> SW846-8015B SW846 3546		
<b>Project:</b> IDEA Skim Pit		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18710.D	1	10/29/14	JS	10/29/14	OP10885	GFI1025
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	343	7.4	5.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	64%		20-130%		

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

4.3  
4

Misc. Forms

---



5

Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



11/21/14

Technical Report for

---

Diamond Operating Inc.

IDEA Skim Pit

**Remediation #: 8252**  
**Soil sample tests**  
**Excavation #3**

Accutest Job Number: D64622

Sampling Date: 11/17/14

---

Report to:

Diamond Operating Inc.  
6666 Gunpark Drive Suite 200  
Boulder, CO 80301  
davep@flatironenergy.com

ATTN: Dave Peterson

Total number of pages in report: 19



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman  
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.

# Table of Contents

Sections:



-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 4: Sample Results .....</b>	<b>6</b>
<b>4.1: D64622-1: IDEA-NORTH SIDE .....</b>	<b>7</b>
<b>Section 5: Misc. Forms .....</b>	<b>9</b>
<b>5.1: Chain of Custody .....</b>	<b>10</b>
<b>Section 6: GC Volatiles - QC Data Summaries .....</b>	<b>12</b>
<b>6.1: Method Blank Summary .....</b>	<b>13</b>
<b>6.2: Blank Spike Summary .....</b>	<b>14</b>
<b>6.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>15</b>
<b>Section 7: GC Semi-volatiles - QC Data Summaries .....</b>	<b>16</b>
<b>7.1: Method Blank Summary .....</b>	<b>17</b>
<b>7.2: Blank Spike Summary .....</b>	<b>18</b>
<b>7.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>19</b>



### Sample Summary

Diamond Operating Inc.

Job No: D64622

IDEA Skim Pit

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D64622-1	11/17/14	10:00 DP	11/18/14	SO	Soil	IDEA-NORTH SIDE

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



### CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Diamond Operating Inc.

Job No D64622

Site: IDEA Skim Pit

Report Date 11/21/2014 12:13:20 P

On 11/18/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 16.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D64622 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

#### Volatiles by GC By Method SW846 8015B

Matrix	SO	Batch ID:	GGB1488
--------	----	-----------	---------

- \* All samples were analyzed within the recommended method holding time.
- \* All method blanks for this batch meet method specific criteria.
- \* Sample(s) D64358-1MS, D64358-1MSD were used as the QC samples indicated.

#### Extractables by GC By Method SW846-8015B

Matrix	SO	Batch ID:	OP10977
--------	----	-----------	---------

- \* All samples were extracted within the recommended method holding time.
- \* All samples were analyzed within the recommended method holding time.
- \* All method blanks for this batch meet method specific criteria.
- \* Sample(s) D64603-2MS, D64603-2MSD were used as the QC samples indicated.

#### Wet Chemistry By Method SM2540G-2011 M

Matrix	SO	Batch ID:	GN27532
--------	----	-----------	---------

- \* The data for SM2540G-2011 M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## Summary of Hits

Job Number: D64622  
Account: Diamond Operating Inc.  
Project: IDEA Skim Pit  
Collected: 11/17/14

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D64622-1	IDEA-NORTH SIDE					
TPH-DRO (C10-C28)		193	7.4	5.5	mg/kg	SW846-8015B



Sample Results

---

Report of Analysis

---

Report of Analysis

4.1  
4

<b>Client Sample ID:</b> IDEA-NORTH SIDE	<b>Date Sampled:</b> 11/17/14
<b>Lab Sample ID:</b> D64622-1	<b>Date Received:</b> 11/18/14
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 90.3
<b>Method:</b> SW846 8015B	
<b>Project:</b> IDEA Skim Pit	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB27508.D	1	11/19/14	EP	n/a	n/a	GGB1488
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	92%		60-140%		

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

<b>Client Sample ID:</b> IDEA-NORTH SIDE	<b>Date Sampled:</b> 11/17/14
<b>Lab Sample ID:</b> D64622-1	<b>Date Received:</b> 11/18/14
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 90.3
<b>Method:</b> SW846-8015B SW846 3546	
<b>Project:</b> IDEA Skim Pit	

4.1  
4

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI19602.D	1	11/20/14	JJ	11/19/14	OP10977	GFI1059
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	193	7.4	5.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	90%		20-130%		

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



**Misc. Forms**

---

5

**Custody Documents and Other Forms**

---

**Includes the following where applicable:**

- Chain of Custody

