

State of Colorado  
Oil and Gas Conservation Commission

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



FOR OGCC USE ONLY

## 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): \_\_\_\_\_

OGCC Employee:

☐ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No: \_\_\_\_\_

## GENERAL INFORMATION

<b>OGCC Operator Number:</b> 47120		<b>Contact Name and Telephone</b>	
<b>Name of Operator:</b> Kerr-McGee Oil and Gas Onshore, LP		<b>Name:</b> Phillip Hamlin	
<b>Address:</b> 1099 18th Street, Suite 1800		<b>No:</b> 970-336-3500	
<b>City:</b> Denver <b>State:</b> CO <b>Zip:</b> 80202		<b>Fax:</b> 970-336-3656	
<b>API/Facility No:</b> 328016		<b>County:</b> Weld	
<b>Facility Name:</b> HSR Corvi		<b>Facility Number:</b> 64N66W36NWNE	
<b>Well Name:</b> HSR Corvi		<b>Well Number:</b> 2-36	
<b>Location (QtrQtr, Sec, Twp, Rng, Meridian):</b> NWNE S36 T4N R66W		<b>Latitude:</b> 40.273019 <b>Longitude:</b> -104.722636	

## TECHNICAL CONDITIONS

<b>Type of Waste Causing Impact (crude oil, condensate, produced water, etc.):</b> Crude Oil and Produced Water	
<b>Site Conditions:</b> Is location within a sensitive area (according to Rule 901e)? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, attach evaluation.	
<b>Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.):</b> Non-Crop Land	
<b>Soil type, if not previously identified on Form 2A or Federal Surface Use Plan:</b> Silty sand to silty clay	
<b>Potential receptors (water wells within 1/4 mi, surface waters, etc.):</b> The nearest surface water is located approximately 1400' northwest of the site. The nearest water well is located approximately 630' northwest of the release area.	
<b>Description of Impact (if previously provided, refer to that form or document):</b>	
<b>Impacted Media (check):</b>	<b>Extent of Impact:</b>
<input checked="" type="checkbox"/> Soils	25' (E-W) x 15' (N-S) x 19' bgs
<input type="checkbox"/> Vegetation	
<input checked="" type="checkbox"/> Groundwater	See attached data
<input type="checkbox"/> Surface water	
<b>How Determined:</b>	
Excavation, soil sampling, and laboratory analysis	
Groundwater sampling and laboratory analysis	

## REMEDIALATION WORKPLAN

<b>Describe initial action taken (if previously provided, refer to that form or document):</b> <p>On February 9, 2015, historical hydrocarbon impacts were discovered during the abandonment of the HSR Corvi 64N66W36NWNE production facility. The volume of released material is unknown. The facility was shut in, associated infrastructure removed, and excavation activities commenced. Groundwater was not encountered in the initial excavation. An Initial Form 19 was submitted to the COGCC on February 12, 2014, (Document # 400789156), and a Supplemental Form 19 was submitted to the COGCC on February 19, 2015, (Document # 400794046). The COGCC has issued Spill Tracking # 440852 for this release.</p>
<b>Describe how source is to be removed:</b> <p>On February 9, 2015, excavation activities commenced and approximately 150 cubic yards of impacted material were excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Excavation activities were guided in the field using a photoionization detector (PID) to measure volatile organic compound (VOC) concentrations in soil. Soil samples were collected from the base and sidewalls of the excavation area at approximately 18 and 15 feet bgs, respectively. Soil samples were submitted to Origins Laboratory in Denver, Colorado for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) by USEPA Method 8260, TPH - diesel range organics and oil range organics (DRO and ORO) by USEPA Method 8015. Laboratory results indicated that benzene and TPH concentrations in soil samples N01@15, S01@15, W01@15, and B01@18 were above applicable COGCC Table 910-1 standards. Additional excavation activities were not conducted due to the presence of multiple active underground lines. Between March 5 and 10, 2015, six soil borings (S-BH01, W-BH02, N-BH03, N-BH04, W-BH05, and NW-BH06) were advanced to depths between 22 and 32 feet bgs to further delineate soil impacts. Soil impacted above COGCC Table 910-1 standards was encountered in borings W-BH02 and NW-BH06. Groundwater was encountered in the boreholes at approximately 19 feet bgs. Six groundwater samples (S-BH01, W-BH02, N-BH03, N-BH04, W-BH05, and NW-BH06) were collected and submitted for laboratory analysis of BTEX. Analytical results received on March 12, 2015, indicated that multiple constituents in samples BH02, BH03, BH04, BH05, and BH06 were above the applicable COGCC Table 910-1 groundwater standards. Soil and groundwater analytical results are summarized in Tables 1 and 2, respectively. Soil and soil boring sample locations are illustrated on Figure 1 and laboratory analytical reports are included as Attachment A.</p>
<b>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.:</b> <p>Impacted soil was excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado. Remediation options to address remaining in-situ soil impacts above COGCC Table 910-1 standards, including in-situ and ex-situ methodologies, are currently being evaluated. Proposed groundwater monitoring and remediation measures are described on the following page.</p>

Submit Page 2 with Page 1.





## REMEDIATION WORKPLAN (CONT.)

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

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

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

As previously described, soil borings S-BH01, W-BH02, N-BH03, N-BH04, W-BH05, and NW-BH06 were converted to temporary monitoring wells BH01 - BH06 between March 5 and 10, 2015, to assess the extent of potential groundwater impacts. Additional temporary groundwater monitoring wells (BH07 - BH11) were installed on August 17 and 25, 2015. Groundwater samples are collected on a quarterly basis and submitted to Origins Laboratory in Denver, Colorado for analysis of BTEX by USEPA Method 8260B. Temporary monitoring well locations and the March 2016 groundwater analytical results are illustrated on Figure 2, and the most recent quarterly groundwater contour map is presented on Figure 3. Groundwater analytical results are summarized in Table 2, and the groundwater laboratory analytical reports and well completion diagrams are included as Attachments A and B, respectively. Quarterly groundwater monitoring at the temporary monitoring locations will be conducted until BTEX concentrations remain below COGCC groundwater standards for four consecutive quarters.

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 excavation has been backfilled with clean soil and graded to match the adjacent topography. Kerr-McGee's tank battery has been decommissioned and will not be rebuilt. Reclamation activities at the site will be compliant with COGCC regulations.

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:

Laboratory data indicate that impacted soil was partially removed via excavation. Remediation options for remaining impacted soils are under evaluation. Temporary monitoring wells have been installed to further assess groundwater impacts, and groundwater points of compliance have been achieved in multiple directions. Additional monitoring wells may be installed as necessary. Soil and groundwater analytical results are summarized in Tables 1 and 2, respectively. The analytical laboratory reports are included as Attachment A.

Final disposition of E&amp;P waste (land treated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Impacted soil was transported to the Buffalo Ridge Landfill in Keensburg, Colorado for disposal.

## IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	2/9/2015	Date Site Investigation Completed:	TBD	Remediation Plan Submitted:	
Remediation Start Date:	2/9/2015	Anticipated Completion Date:	12/15/2017	Actual Completion Date:	

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

Print Name: Phillip Hamlin

Signed: \_\_\_\_\_

Title: Senior HSE RepresentativeDate: 5/10/2016

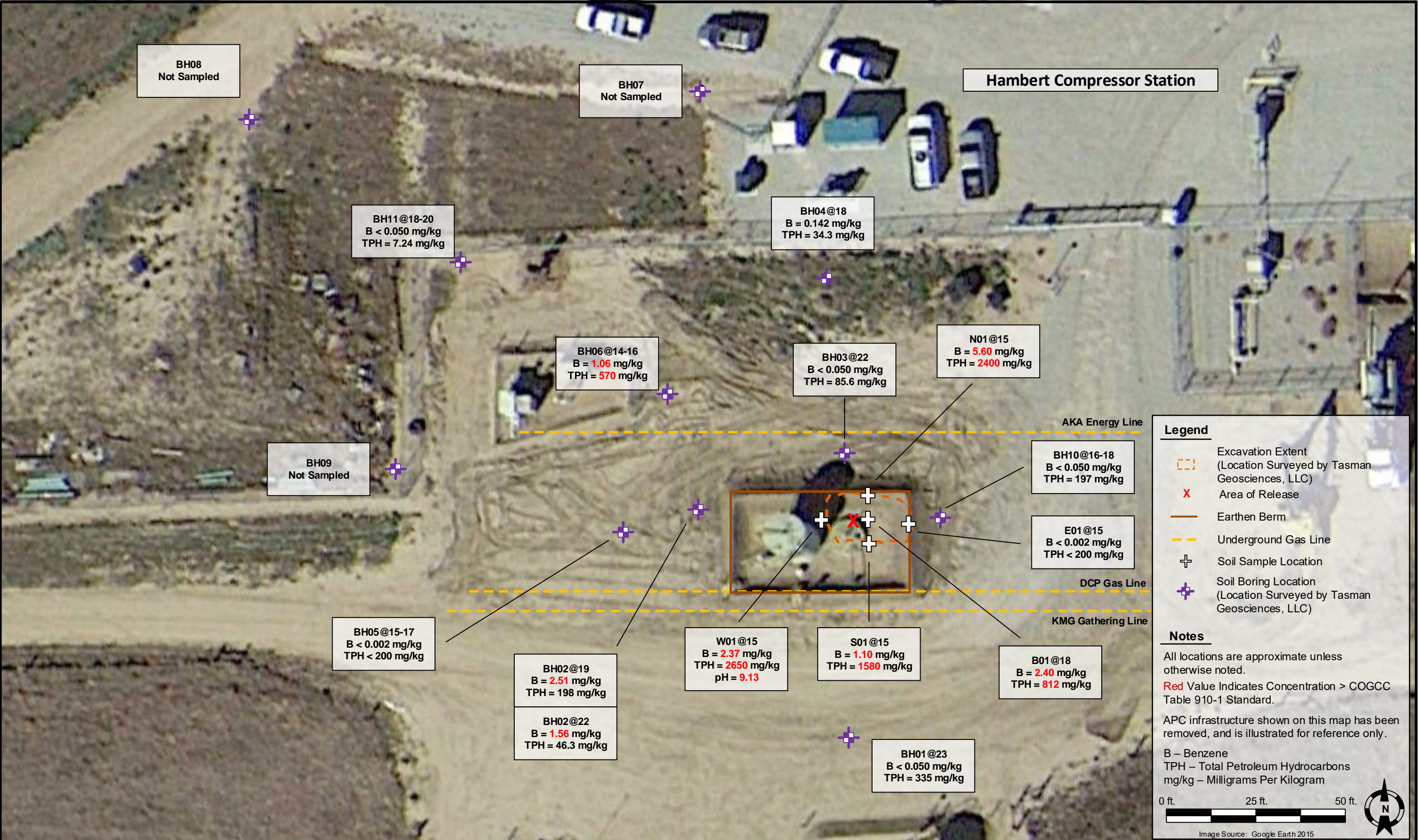
OGCC Approved: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## FIGURES





DATE:	April 22, 2016
DESIGNED BY:	R. Bruner
DRAWN BY:	R. Bruner



**Kerr-McGee Oil and Gas Onshore, LP**  
**HSR CORVI 64N66W36NWN**  
NWNE, Section 36, Township 4 North, Range 66 West  
Weld County, Colorado

Sample Location  
Map

FIGURE  
1





DATE:	April 25, 2016
DESIGNED BY:	R. Bruner
DRAWN BY:	R. Bruner

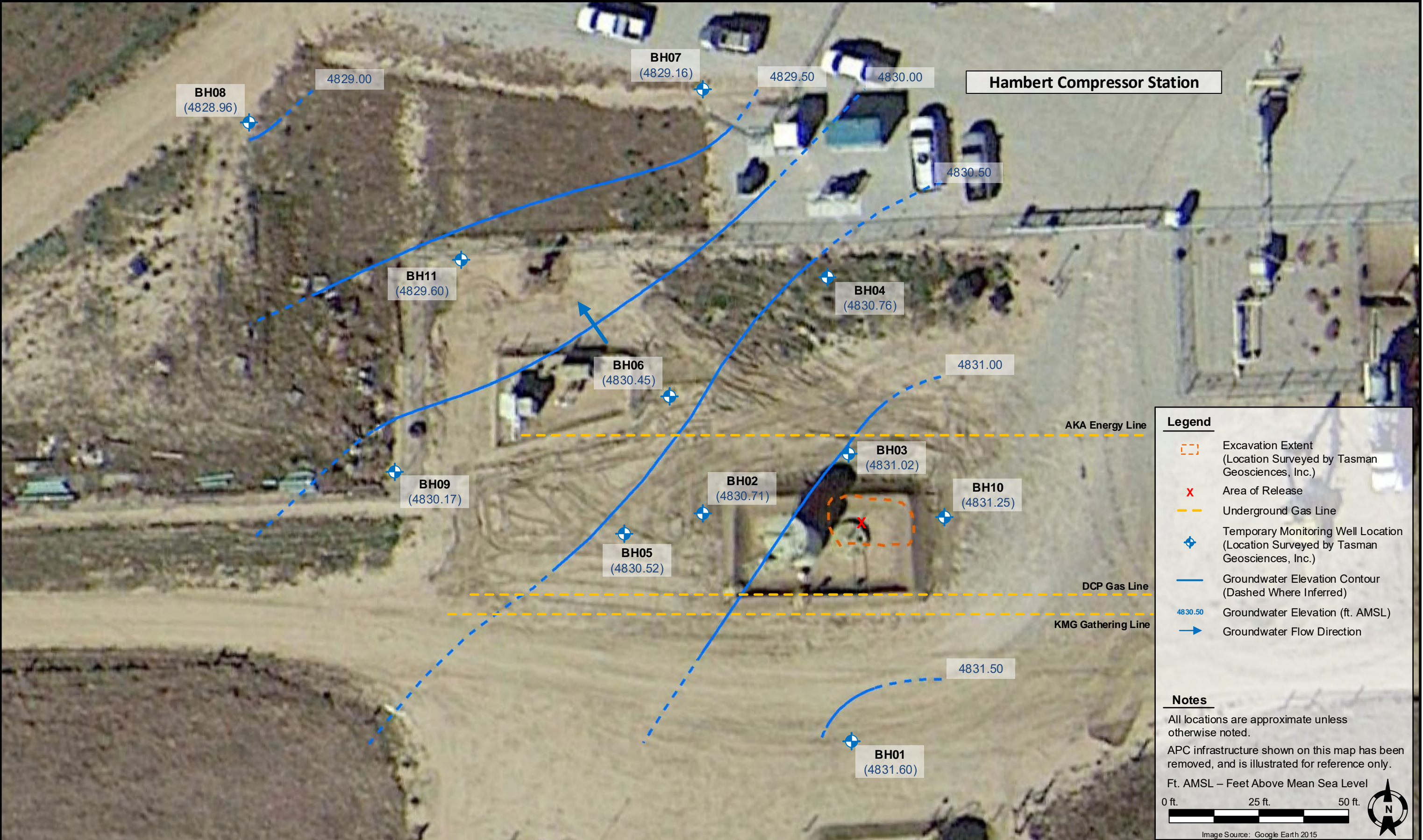


Kerr-McGee Oil and Gas Onshore, LP  
HSR CORVI 64N66W36NWNE  
NWNE, Section 36, Township 4 North, Range 66 West  
Weld County, Colorado

Groundwater Sample Results  
Map (03/16/2016)

FIGURE  
2





DATE:	April 1, 2016
DESIGNED BY:	Z. Mahaffey
DRAWN BY:	Z. Mahaffey



Kerr-McGee Oil and Gas Onshore, LP  
HSR CORVI 64N66W36NWNWNE  
NWNW, Section 36, Township 4 North, Range 66 West  
Weld County, Colorado

Groundwater Elevation Contour  
Map (3/16/2016)

FIGURE  
3



**ANALYTICAL  
TABLES**



**TABLE 1**  
**HSR CORVI 64N66W36NWNE**  
**SOIL SAMPLE RESULTS SUMMARY TABLE**  
**KERR-McGEE OIL AND GAS ONSHORE LP**

Sample ID	Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH- GRO (mg/kg)	TEPH- DRO (mg/kg)	TEPH- ORO (mg/kg)	EC (mmhos/cm)	pH (units)
<b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500</b>			<b>4 mmhos/cm or 2x BG</b>	<b>6-9</b>
N01@15	2/9/2015	15	<b>5.60</b>	77.8	7.82	125	<b>1,920</b>	<b>480</b>	<200	0.138	8.73
S01@15	2/9/2015	15	<b>1.10</b>	23.8	5.33	83.2	<b>1,200</b>	<b>380</b>	<200	0.118	8.39
E01@15	2/9/2015	15	<0.002	<0.002	<0.002	0.007	<0.200	<50	<200	0.0842	8.42
W01@15	2/9/2015	15	<b>2.37</b>	2.16	13.2	164	<b>2,200</b>	<b>450</b>	<200	0.172	<b>9.13</b>
B01@18	2/9/2015	18	<b>2.40</b>	20.7	2.34	40.2	<b>632</b>	<b>180</b>	<200	0.201	8.96
S-BH01@23	3/5/2015	23	<0.050	<0.050	1.55	7.87	335	<50	<200	0.132	8.42
W-BH02@19	3/6/2015	19	<b>2.51</b>	16.9	0.856	10.3	198	<50	<200	0.133	8.12
W-BH02@22	3/6/2015	22	<b>1.56</b>	0.235	0.256	3.04	46.3	<50	<200	0.0859	8.45
N-BH03@22	3/6/2015	22	<0.050	0.146	0.105	1.58	85.6	<50	<200	0.0658	8.84
N-BH04@18	3/6/2015	18	0.142	0.258	0.194	2.26	34.3	<50	<200	0.0908	8.35
W-BH05@15-17	3/10/2015	15-17	<0.002	<0.002	<0.002	<0.002	<50	<50	<200	0.0912	8.93
NW-BH06@14-16	3/10/2015	14-16	<b>1.06</b>	24.3	3.05	43.7	<b>420</b>	<b>150</b>	<200	0.147	8.98
BH10@16-18	8/25/2015	16-18	<0.050	<0.050	0.300	1.92	197	<50	<200	NS	NS
BH11@18-20	8/25/2015	18-20	<0.050	<0.050	<0.050	<0.050	7.24	<50	<200	NS	NS

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 1, 2015.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

TVPH - GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH - DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH - ORO = Total extractable petroleum hydrocarbons - oil range organics

EC = Electrical conductivity

BG = Background

mmhos/cm = Millimhos per centimeter

mg/kg = Milligrams per kilogram.

ft. bgs = Feet below ground surface.

NS = Not Sampled

**BOLD** = Analytical result is in exceedance of COGCC Table 910-1 soil standards.



**TABLE 2**  
**HSR CORVI 64N66W36NWNE**  
**GROUNDWATER SAMPLE RESULTS SUMMARY TABLE**  
**KERR-McGEE OIL AND GAS ONSHORE LP**

Sample Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth To Water (ft. BTOC)
<b>COGCC Standards for groundwater (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
BH01	3/11/2015	3.4	<1.0	4.2	23.6	18.20
BH01	9/8/2015	<b>7.0</b>	<1.0	6.0	3.3	15.98
BH01	12/8/2015	<1.0	<1.0	<1.0	<1.0	16.16
BH01	3/16/2016	<1.0	<1.0	<1.0	<1.0	15.60
BH02	3/11/2015	<b>1,350</b>	<b>944</b>	144	<b>1,900</b>	19.72
BH02	9/8/2015	<b>3,090</b>	<b>2,700</b>	131	<b>2,010</b>	14.57
BH02	12/8/2015	<b>2,460</b>	<b>933</b>	78.8	928	14.60
BH02	3/16/2016	<b>2,560</b>	<b>712</b>	72.4	925	14.03
BH03	3/11/2015	<b>720</b>	<b>4,140</b>	258	<b>4,380</b>	14.99
BH03	9/8/2015	<b>158</b>	220	12.8	297	12.69
BH03	12/8/2015	<b>52.6</b>	18.4	2.1	37.1	12.81
BH03	3/16/2016	<b>9.5</b>	7.2	<4.0	8.9	12.29
BH04	3/11/2015	<b>334</b>	<b>3,700</b>	<b>722</b>	<b>9,660</b>	14.31
BH04	9/8/2015	<b>1,000</b>	<b>6,590</b>	575	<b>8,070</b>	11.73
BH04	12/8/2015	<b>176</b>	474	280	<b>3,480</b>	11.85
BH04	3/16/2016	<b>172</b>	316	196	<b>2,320</b>	11.30
BH05	3/11/2015	<b>75.5</b>	<1.0	65.4	346	17.58
BH05	9/8/2015	<b>39.7</b>	1.3	4.5	10.9	15.18
BH05	12/8/2015	<b>28.5</b>	<2.0	38.8	127	15.22
BH05	3/16/2016	<b>5.9</b>	<1.0	9.2	29.3	14.62
BH06	3/11/2015	<b>13,900</b>	<b>20,500</b>	<b>760</b>	<b>11,800</b>	15.59
BH06	9/8/2015	<b>4,480</b>	<b>6,010</b>	95.3	<b>3,770</b>	13.03
BH06	12/8/2015	<b>12,200</b>	<b>11,100</b>	598	<b>10,200</b>	13.03
BH06	3/16/2016	<b>11,800</b>	<b>6,810</b>	<b>732</b>	<b>12,100</b>	12.47
BH07	9/8/2015	<1.0	<1.0	<1.0	<1.0	12.20
BH07	12/8/2015	<1.0	<1.0	<1.0	<1.0	12.17
BH07	3/16/2016	<1.0	<1.0	<1.0	<1.0	11.59
BH08	9/8/2015	<1.0	<1.0	<1.0	<1.0	12.29
BH08	12/8/2015	<1.0	<1.0	<1.0	<1.0	12.09
BH08	3/16/2016	<1.0	<1.0	<1.0	<1.0	11.54
BH09	9/8/2015	<1.0	<1.0	<1.0	<1.0	14.05
BH09	12/8/2015	<1.0	<1.0	<1.0	<1.0	13.96
BH09	3/16/2016	<1.0	<1.0	<1.0	<1.0	13.40

**Notes:**

1. Standards for groundwater are taken from 2 CCR 404-1, Table 910-1, effective January 1, 2015.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

µg/L = Micrograms per liter.

ft. BTOC = Feet below top of casing.

**BOLD** = Analytical result is in exceedance of COGCC Table 910-1 groundwater standards.

**TABLE 2**  
**HSR CORVI 64N66W36NWN**  
**GROUNDWATER SAMPLE RESULTS SUMMARY TABLE**  
**KERR-McGEE OIL AND GAS ONSHORE LP**

Sample Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth To Water (ft. BTOC)
<b>COGCC Standards for groundwater (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
BH10	9/8/2015	<1.0	<1.0	<1.0	2.7	13.73
BH10	12/8/2015	<1.0	<1.0	<1.0	<1.0	13.88
BH10	3/16/2016	<1.0	<1.0	<1.0	<1.0	13.37
BH11	9/8/2015	1.7	2.6	<1.0	<1.0	13.25
BH11	12/8/2015	<1.0	<1.0	<1.0	<1.0	13.14
BH11	3/16/2016	<1.0	<1.0	<1.0	<1.0	12.58

**Notes:**

1. Standards for groundwater are taken from 2 CCR 404-1, Table 910-1, effective January 1, 2015.

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ft. BTOC = Feet below top of casing.

**BOLD** = Analytical result is in exceedance of COGCC Table 910-1 groundwater standards.



**ATTACHMENT A  
LABORATORY  
ANALYTICAL REPORTS**





February 10, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - HSR Corvi 2-36**

**Project Number - [none]**

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. February 09, 2015. This project is associated with Origins project number X502097-01.

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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01 @ 15	X502097-01	Soil	February 9, 2015 14:30	02/09/2015 16:10
S01 @ 15	X502097-02	Soil	February 9, 2015 14:33	02/09/2015 16:10
E01 @ 15	X502097-03	Soil	February 9, 2015 14:35	02/09/2015 16:10
W01 @ 15	X502097-04	Soil	February 9, 2015 14:37	02/09/2015 16:10
B01 @ 18	X502097-05	Soil	February 9, 2015 14:40	02/09/2015 16:10

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.*



Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**XSL2047**

www.originslaboratory.com

Client: Tasman Geo

Project Manager: Christine Wasko

Address: \_\_\_\_\_

Project Name: HSC Canv. 2-36

Telephone Number: 917 230 2807

Project Number: \_\_\_\_\_

Email Address: Cusko@Tasman-geo.com

Samples Collected By: Pete Nelson

page / of /

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #			Other
N01015	2/1/15	1430	2	X					X			TPH (XTC) 681EX EC pH SAR	Run SAR if 1
S01015	1433	1433	2	X					X				Sample EC > 4 2
E01015	1435	1435	2	X					X				3
L01015	1437	1437	2	X					X				4
B01018	1440	1440	2	X					X				5
													6
													7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:	
						Same Day	Standard
[Signature]	2/9/15	1610	Kosco	2.9.15		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	<input type="checkbox"/>	<input type="checkbox"/>
						48 Hr	72 Hr

Temp Received: 5.3

Date Results Needed

Origins Laboratory, Inc.

Jeff Pellgrini

*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.*

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XS02097

Client: Tasman

Client Project ID: HSR Corvi 2-36

Checklist Completed by: Jeff Smith

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

Date/time completed: 2/9/15

Airbill #: NA

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

Cooler Number/Temperature: 1153 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: 7053

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"/>	<u>PH</u>
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 (Project Manager)

02-09-15/1920  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jeff Pellegrini*

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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

N01 @ 15  
2/9/2015 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X502097-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	480	50	mg/kg	1	5B09012	02/09/2015	02/10/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	81.4 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	1920	50.0	mg/kg	250	5B09007	02/09/2015	02/09/2015
Benzene	5.60	0.050	"	25	"	"	02/09/2015
Toluene	77.8	0.498	"	250	"	"	02/09/2015
Ethylbenzene	7.82	0.050	"	25	"	"	02/09/2015
Xylenes, total	125	0.498	"	250	"	"	02/09/2015

Surrogate: 1,2-Dichloroethane-d4	154 %	70-130			"	"	" S-02
Surrogate: Toluene-d8	121 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	108 %	70-130			"	"	"

**pH in Soil by EPA 9045D**

pH	8.73		pH Units	1	5B09014	02/09/2015	02/09/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.138		mmhos/cm	"	5B09013	02/09/2015	02/09/2015
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Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

S01 @ 15  
2/9/2015 2:33:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X502097-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	380	50	mg/kg	1	5B09012	02/09/2015	02/10/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	86.2 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	1200	50.0	mg/kg	250	5B09007	02/09/2015	02/09/2015
Benzene	1.10	0.050	"	25	"	"	02/09/2015
Toluene	23.8	0.498	"	250	"	"	02/09/2015
Ethylbenzene	5.33	0.050	"	25	"	"	02/09/2015
Xylenes, total	83.2	0.498	"	250	"	"	02/09/2015

Surrogate: 1,2-Dichloroethane-d4	137 %	70-130			"	"	" S-02
Surrogate: Toluene-d8	108 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"

**pH in Soil by EPA 9045D**

pH	8.39		pH Units	1	5B09014	02/09/2015	02/09/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.118		mmhos/cm	"	5B09013	02/09/2015	02/09/2015
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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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

E01 @ 15  
2/9/2015 2:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X502097-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	50	mg/kg	1	5B09012	02/09/2015	02/10/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	91.4 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5B09007	02/09/2015	02/09/2015
Benzene	ND	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	<b>0.007</b>	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	135 %	70-130			"	"	" S-GC
Surrogate: Toluene-d8	103 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"

**pH in Soil by EPA 9045D**

pH	<b>8.42</b>		pH Units	1	5B09014	02/09/2015	02/09/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	<b>0.0842</b>		mmhos/cm	"	5B09013	02/09/2015	02/09/2015
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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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

W01 @ 15  
2/9/2015 2:37:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X502097-04 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	450	50	mg/kg	1	5B09012	02/09/2015	02/10/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	79.5 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	2200	50.0	mg/kg	250	5B09007	02/09/2015	02/09/2015
Benzene	2.37	0.050	"	25	"	"	02/10/2015
Toluene	2.16	0.050	"	"	"	"	"
Ethylbenzene	13.2	0.498	"	250	"	"	02/09/2015
Xylenes, total	164	0.498	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	166 %	70-130			"	"	" S-02
Surrogate: Toluene-d8	135 %	70-130			"	"	" S-02
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"

**pH in Soil by EPA 9045D**

pH	9.13		pH Units	1	5B09014	02/09/2015	02/09/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.172		mmhos/cm	"	5B09013	02/09/2015	02/09/2015
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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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

B01 @ 18  
2/9/2015 2:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X502097-05 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	180	50	mg/kg	1	5B09012	02/09/2015	02/10/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	96.5 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	632	50.0	mg/kg	250	5B09007	02/09/2015	02/09/2015
Benzene	2.40	0.050	"	25	"	"	02/10/2015
Toluene	20.7	0.498	"	250	"	"	02/09/2015
Ethylbenzene	2.34	0.050	"	25	"	"	02/10/2015
Xylenes, total	40.2	0.498	"	250	"	"	02/09/2015

Surrogate: 1,2-Dichloroethane-d4	130 %	70-130			"	"	"
Surrogate: Toluene-d8	107 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"

**pH in Soil by EPA 9045D**

pH	8.96		pH Units	1	5B09014	02/09/2015	02/09/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.201		mmhos/cm	"	5B09013	02/09/2015	02/09/2015
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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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5B09007 - EPA 5030 (soil)**

**Blank (5B09007-BLK1)**

Prepared: 02/09/2015 Analyzed: 02/09/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	81.0		ug/kg	62.5		130	70-130			
Surrogate: Toluene-d8	64.2		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	63.7		"	62.5		102	70-130			

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.*

Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5B09007 - EPA 5030 (soil)**

**LCS (5B09007-BS1)**

Prepared: 02/09/2015 Analyzed: 02/09/2015

Benzene	0.080	0.002	mg/kg	0.100		80.2	77.1-124			
Toluene	0.083	0.002	"	0.100		83.2	74.5-128			
Ethylbenzene	0.083	0.002	"	0.100		82.6	66.4-127			
m,p-Xylene	0.167	0.004	"	0.200		83.7	76.6-124			
o-Xylene	0.086	0.002	"	0.100		86.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	79.0		ug/kg	62.5		126	70-130			
Surrogate: Toluene-d8	64.0		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	65.3		"	62.5		104	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5B09007 - EPA 5030 (soil)**

Matrix Spike (5B09007-MS1)		Source: X502080-01			Prepared: 02/09/2015 Analyzed: 02/09/2015					
Benzene	0.072	0.002	mg/kg	0.100	ND	71.8	71.8-126			
Toluene	0.072	0.002	"	0.100	ND	72.1	65.1-130			
Ethylbenzene	0.071	0.002	"	0.100	ND	71.4	62.2-130			
m,p-Xylene	0.142	0.004	"	0.200	ND	71.2	46.5-137			
o-Xylene	0.071	0.002	"	0.100	ND	71.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	73.6		ug/kg	62.5		118	70-130			
Surrogate: Toluene-d8	60.0		"	62.5		96.0	70-130			
Surrogate: 4-Bromofluorobenzene	65.3		"	62.5		104	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5B09007 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (5B09007-MSD1)</b>		<b>Source: X502080-01</b>			Prepared: 02/09/2015 Analyzed: 02/09/2015					
Benzene	0.094	0.002	mg/kg	0.100	ND	94.0	71.8-126	26.7	11.3	QR-03
Toluene	0.095	0.002	"	0.100	ND	95.3	65.1-130	27.7	15.4	QR-03
Ethylbenzene	0.096	0.002	"	0.100	ND	95.9	62.2-130	29.4	19.6	QR-03
m,p-Xylene	0.191	0.004	"	0.200	ND	95.7	46.5-137	29.3	19.2	QR-03
o-Xylene	0.102	0.002	"	0.100	ND	102	54.2-134	35.6	17.9	QR-03
Surrogate: 1,2-Dichloroethane-d4	78.6		ug/kg	62.5		126	70-130			
Surrogate: Toluene-d8	64.6		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	66.9		"	62.5		107	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**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
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**Batch 5B09012 - EPA 3580**

**Blank (5B09012-BLK1)**

Prepared: 02/09/2015 Analyzed: 02/09/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	50		"	50.0		99.6	59-131			

**LCS (5B09012-BS1)**

Prepared: 02/09/2015 Analyzed: 02/09/2015

Diesel (C10-C28)	880	50	mg/kg	1000		87.7	64-121			
Residual Range Organics (C28-C36)	1000	200	"	1000		100	58-124			
Surrogate: o-Terphenyl	49		"	50.0		98.8	59-131			

**Matrix Spike (5B09012-MS1)**

**Source: X502096-01**

Prepared: 02/09/2015 Analyzed: 02/09/2015

Diesel (C10-C28)	900	50	mg/kg	1000	17	88.3	53-125			
Residual Range Organics (C28-C36)	1000	200	"	1000	16	101	47-133			
Surrogate: o-Terphenyl	44		"	50.0		88.3	59-131			

**Matrix Spike Dup (5B09012-MSD1)**

**Source: X502096-01**

Prepared: 02/09/2015 Analyzed: 02/09/2015

Diesel (C10-C28)	900	50	mg/kg	1000	17	88.3	53-125	0.0121	20	
Residual Range Organics (C28-C36)	1000	200	"	1000	16	99.7	47-133	1.10	20	
Surrogate: o-Terphenyl	46		"	50.0		91.2	59-131			

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**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 5B09013 - NO PREP</b>										
<b>Blank (5B09013-BLK1)</b>					Prepared: 02/09/2015 Analyzed: 02/09/2015					
Specific Conductance (EC)	0.00280		mmhos/cm							
<b>Duplicate (5B09013-DUP1)</b>					<b>Source: X502097-01</b> Prepared: 02/09/2015 Analyzed: 02/09/2015					
Specific Conductance (EC)	0.140		mmhos/cm		0.138			1.44	25	
<b>Batch 5B09014 - NO PREP</b>										
<b>Duplicate (5B09014-DUP1)</b>					<b>Source: X502097-01</b> Prepared: 02/09/2015 Analyzed: 02/09/2015					
pH	8.75		pH Units		8.73			0.229	25	

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: KMG - HSR Corvi 2-36

## Notes and Definitions

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- 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.*





March 06, 2015

Tasman Geosciences  
Christine Wasko  
6899 Pecos Street, Unit C  
Denver CO 80211

Project Name - KMG - HSR Corvi 2-36

Project Number - [none]

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. March 05, 2015. This project is associated with Origins project number X503042-01.

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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-BH01 @ 23	X503042-01	Soil	March 5, 2015 14:20	03/05/2015 17:20

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

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XS03042

page 1 of 1

**ORIGINS**  
LABORATORY, INC

Client: Tasman Geo  
Address: \_\_\_\_\_  
Project Manager: Christine Wasko  
Project Name: HSR-Corvi 2-36  
Project Number: \_\_\_\_\_  
Samples Collected By: Brake Nelson  
Telephone Number: 912 230 2807  
Email Address: CWasko@tasman-geo.com

1725 Elk Place | Phone: 303.433.1322 | Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #			Other
S-BH01023	3/5/15	1420	2	X					X			X EC/SHD X TPA DKO/SHD X GSTER (5260)	1
													2
													3
													4
													5
													6
													7
													8
													9
													10
Relinquished By:	Date: 3/5/2015	Time: 1720		Received By:	Date: 3/5/15	Time: 1720		Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard					

Date Results Needed

Temp Received: 11.1

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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XS03042

Client: Tasman

Client Project ID: HSR-Corvi 236

Checklist Completed by: Jeff Smith

Shipped Via: H/D

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

Date/time completed: 3/5/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 11.1 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C (Describe)

Thermometer ID: TR053

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"/>		Sampled Some Dry
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" 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 checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			PH
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<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 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 (Project Manager)

3/5/15  
Date/Time Reviewed

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

S-BH01 @ 23  
3/5/2015 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X503042-01 (Soil)

## DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5C05006	03/05/2015	03/05/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

<i>Surrogate: o-Terphenyl</i>	%	59-131			"	"	"
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## GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	335	5.00	mg/kg	25	5C05007	03/05/2015	03/05/2015
Benzene	ND	0.050	"	"	"	"	"
Toluene	ND	0.050	"	"	"	"	"
Ethylbenzene	1.55	0.050	"	"	"	"	"
Xylenes, total	7.87	0.050	"	"	"	"	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	111 %	70-130			"	"	"
<i>Surrogate: Toluene-d8</i>	144 %	70-130			"	"	" S-04
<i>Surrogate: 4-Bromofluorobenzene</i>	95.2 %	70-130			"	"	"

## pH in Soil by EPA 9045D

pH	8.42		pH Units	1	5C05008	03/05/2015	03/05/2015
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## Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.132		mmhos/cm	"	5C05009	"	03/05/2015
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Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C05007 - EPA 5030 (soil)										
Blank (5C05007-BLK1)					Prepared: 03/05/2015 Analyzed: 03/05/2015					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	63.2		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	67.2		"	62.5		107	70-130			
Surrogate: 4-Bromofluorobenzene	61.9		"	62.5		99.0	70-130			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C05007 - EPA 5030 (soil)										
LCS (5C05007-BS1)					Prepared: 03/05/2015 Analyzed: 03/05/2015					
Benzene	0.092	0.002	mg/kg	0.100		91.7	77.1-124			
Toluene	0.101	0.002	"	0.100		101	74.5-128			
Ethylbenzene	0.096	0.002	"	0.100		96.1	66.4-127			
m,p-Xylene	0.190	0.004	"	0.200		95.2	76.6-124			
o-Xylene	0.101	0.002	"	0.100		101	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	54.7		ug/kg	62.5		87.6	70-130			
Surrogate: Toluene-d8	64.4		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	68.2		"	62.5		109	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C05007 - EPA 5030 (soil)										
Matrix Spike (5C05007-MS1)		Source: X503034-13			Prepared: 03/05/2015 Analyzed: 03/05/2015					
Benzene	0.091	0.002	mg/kg	0.100	ND	90.5	71.8-126			
Toluene	0.099	0.002	"	0.100	ND	99.2	65.1-130			
Ethylbenzene	0.092	0.002	"	0.100	ND	91.6	62.2-130			
m,p-Xylene	0.189	0.004	"	0.200	ND	94.3	46.5-137			
o-Xylene	0.093	0.002	"	0.100	ND	93.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	57.2		ug/kg	62.5		91.4	70-130			
Surrogate: Toluene-d8	59.5		"	62.5		95.2	70-130			
Surrogate: 4-Bromofluorobenzene	61.2		"	62.5		98.0	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C05007 - EPA 5030 (soil)										
Matrix Spike Dup (5C05007-MSD1)		Source: X503034-13			Prepared: 03/05/2015 Analyzed: 03/05/2015					
Benzene	0.084	0.002	mg/kg	0.100	ND	83.6	71.8-126	7.90	11.3	
Toluene	0.094	0.002	"	0.100	ND	94.1	65.1-130	5.36	15.4	
Ethylbenzene	0.079	0.002	"	0.100	ND	78.9	62.2-130	14.9	19.6	
m,p-Xylene	0.159	0.004	"	0.200	ND	79.6	46.5-137	16.9	19.2	
o-Xylene	0.081	0.002	"	0.100	ND	81.4	54.2-134	13.5	17.9	
Surrogate: 1,2-Dichloroethane-d4	60.7		ug/kg	62.5		97.1	70-130			
Surrogate: Toluene-d8	70.6		"	62.5		113	70-130			
Surrogate: 4-Bromofluorobenzene	62.6		"	62.5		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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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
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Batch 5C05006 - EPA 3580

Blank (5C05006-BLK1)

Prepared: 03/05/2015 Analyzed: 03/05/2015

Diesel (C10-C28)	ND	50	mg/kg
Residual Range Organics (C28-C36)	ND	200	"

<i>Surrogate: o-Terphenyl</i>	50	"	50.0	99.6	59-131
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LCS (5C05006-BS1)

Prepared: 03/05/2015 Analyzed: 03/05/2015

Diesel (C10-C28)	990	50	mg/kg	1000	99.4	64-121
Residual Range Organics (C28-C36)	1100	200	"	1000	113	58-124

<i>Surrogate: o-Terphenyl</i>	52	"	50.0	105	59-131
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Matrix Spike (5C05006-MS1)

Source: X503038-01

Prepared: 03/05/2015 Analyzed: 03/05/2015

Diesel (C10-C28)	830	50	mg/kg	1000	23	80.7	53-125
Residual Range Organics (C28-C36)	910	200	"	1000	18	89.2	47-133

<i>Surrogate: o-Terphenyl</i>	34	"	50.0	67.7	59-131
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Matrix Spike Dup (5C05006-MSD1)

Source: X503038-01

Prepared: 03/05/2015 Analyzed: 03/05/2015

Diesel (C10-C28)	810	50	mg/kg	1000	23	78.5	53-125	2.60	20
Residual Range Organics (C28-C36)	880	200	"	1000	18	86.1	47-133	3.44	20

<i>Surrogate: o-Terphenyl</i>	33	"	50.0	66.2	59-131
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Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Classical Chemistry Parameters - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C05008 - NO PREP										
Duplicate (5C05008-DUP1)		Source: X503041-01			Prepared: 03/05/2015 Analyzed: 03/05/2015					
pH	8.03		pH Units		8.06			0.373	25	
Batch 5C05009 - NO PREP										
Blank (5C05009-BLK1)		Prepared: 03/05/2015 Analyzed: 03/05/2015								
Specific Conductance (EC)	0.00240		mmhos/cm							
Duplicate (5C05009-DUP1)		Source: X503041-01			Prepared: 03/05/2015 Analyzed: 03/05/2015					
Specific Conductance (EC)	0.151		mmhos/cm		0.156			3.12	25	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

---

Notes and Definitions

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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





March 09, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - HSR Corvi 2-36**

**Project Number - [none]**

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. March 06, 2015. This project is associated with Origins project number X503054-01.

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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: KMG - HSR Corvi 2-36

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W-BH02 @ 22	X503054-01	Soil	March 6, 2015 10:35	03/06/2015 17:34
W-BH02 @ 19	X503054-02	Soil	March 6, 2015 10:40	03/06/2015 17:34
N-BH03 @ 22	X503054-03	Soil	March 6, 2015 12:50	03/06/2015 17:34
N-BH04 @ 18	X503054-04	Soil	March 6, 2015 14:45	03/06/2015 17:34

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.*

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

# ORIGINS

## LABORATORY, INC

### X503054

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page 1 of 1

Client: Tasman Gro

Project Manager: Christine Watson

Address: \_\_\_\_\_





Project Name: HSE Cavi 236

Telephone Number: 972 230 2800

Project Number: \_\_\_\_\_

Samples Collected By: Frank Nelson

Email Address: cw@tasman-gro.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #		
Blank B			1									1
W-BH02022	3/6/18	1035	2	X				X			EC pH TP4.570 C8 15X SAR	2
W-BH02014	1040		2	X				X			+	3
N-BH03022	1250		2	X				X			+	4
N-BH04018	1415		2	X				X			+	5
												6
												7
												8
												9
												10
Relinquished By: 	Date: 3/6/18	Time: 1734		Received By: 				Date: 3/6/18			Time: 1734	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
Relinquished By: 	Date: 3/6/18	Time: 1734		Received By: 				Date: 3/6/18			Time: 1734	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

Temp Received: 5.6

Date Results Needed

Origins Laboratory, Inc.

Jeff Pellgrini

*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.*



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XS03054

Client: Tasman

Client Project ID: HSR Corvi 2-36

Checklist Completed by: Jeff Smith

Shipped Via: H/D

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

Date/time completed: 3/6/15

Airbill #: NA

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

Cooler Number/Temperature: 1/58 °C 1 °C 1 °C (Describe)

Thermometer ID: T603

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"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" 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 checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<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 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.

Jeff Smith  
Reviewed by (Project Manager)

3/6/15  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jen Pellegrini*

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

W-BH02 @ 22  
3/6/2015 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X503054-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	50	mg/kg	1	5C06011	03/06/2015	03/07/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 90.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	46.3	5.00	mg/kg	25	5C06012	03/06/2015	03/08/2015
Benzene	1.56	0.050	"	"	"	"	"
Toluene	0.235	0.050	"	"	"	"	"
Ethylbenzene	0.256	0.050	"	"	"	"	"
Xylenes, total	3.04	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 99.7 % 70-130 " " "

Surrogate: Toluene-d8 106 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 105 % 70-130 " " "

**pH in Soil by EPA 9045D**

pH	8.45		pH Units	1	5C06015	03/06/2015	03/06/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.0859		mmhos/cm	"	5C06016	"	03/06/2015
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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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

W-BH02 @ 19  
3/6/2015 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X503054-02 (Soil)

### DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5C06011	03/06/2015	03/07/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 97.6 % 59-131 " " "

### GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	198	5.00	mg/kg	25	5C06012	03/06/2015	03/08/2015
Benzene	2.51	0.050	"	"	"	"	"
Toluene	16.9	0.100	"	50	"	"	03/08/2015
Ethylbenzene	0.856	0.050	"	25	"	"	03/08/2015
Xylenes, total	10.3	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "

Surrogate: Toluene-d8 141 % 70-130 " " S-04

Surrogate: 4-Bromofluorobenzene 104 % 70-130 " " "

### pH in Soil by EPA 9045D

pH	8.12		pH Units	1	5C06015	03/06/2015	03/06/2015
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### Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.133		mmhos/cm	"	5C06016	"	03/06/2015
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Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**N-BH03 @ 22**  
**3/6/2015 12:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X503054-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	50	mg/kg	1	5C06011	03/06/2015	03/07/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 94.2 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	85.6	5.00	mg/kg	25	5C06012	03/06/2015	03/08/2015
Benzene	ND	0.050	"	"	"	"	"
Toluene	0.146	0.050	"	"	"	"	"
Ethylbenzene	0.105	0.050	"	"	"	"	"
Xylenes, total	1.58	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "  
Surrogate: Toluene-d8 126 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.0 % 70-130 " " "

**pH in Soil by EPA 9045D**

pH	8.84		pH Units	1	5C06015	03/06/2015	03/06/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.0658		mmhos/cm	"	5C06016	"	03/06/2015
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Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**N-BH04 @ 18**  
**3/6/2015 2:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X503054-04 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	50	mg/kg	1	5C06011	03/06/2015	03/07/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	93.3 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	<b>34.3</b>	5.00	mg/kg	25	5C06012	03/06/2015	03/08/2015
Benzene	<b>0.142</b>	0.050	"	"	"	"	"
Toluene	<b>0.258</b>	0.050	"	"	"	"	"
Ethylbenzene	<b>0.194</b>	0.050	"	"	"	"	"
Xylenes, total	<b>2.26</b>	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"
Surrogate: Toluene-d8	109 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"

**pH in Soil by EPA 9045D**

pH	<b>8.35</b>		pH Units	1	5C06015	03/06/2015	03/06/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	<b>0.0908</b>		mmhos/cm	"	5C06016	"	03/06/2015
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Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5C06012 - EPA 5030 (soil)**

**Blank (5C06012-BLK1)**

Prepared: 03/06/2015 Analyzed: 03/06/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	58.5		ug/kg	62.5		93.5	70-130			
Surrogate: Toluene-d8	62.7		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	62.6		"	62.5		100	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5C06012 - EPA 5030 (soil)**

**LCS (5C06012-BS1)**

Prepared: 03/06/2015 Analyzed: 03/06/2015

Benzene	0.111	0.002	mg/kg	0.100		111	77.1-124			
Toluene	0.108	0.002	"	0.100		108	74.5-128			
Ethylbenzene	0.101	0.002	"	0.100		101	66.4-127			
m,p-Xylene	0.216	0.004	"	0.200		108	76.6-124			
o-Xylene	0.099	0.002	"	0.100		98.6	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	59.2		ug/kg	62.5		94.7	70-130			
Surrogate: Toluene-d8	63.7		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	64.9		"	62.5		104	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5C06012 - EPA 5030 (soil)**

Matrix Spike (5C06012-MS1)		Source: X503052-01			Prepared: 03/06/2015 Analyzed: 03/06/2015					
Benzene	0.099	0.002	mg/kg	0.100	ND	98.8	71.8-126			
Toluene	0.099	0.002	"	0.100	ND	99.3	65.1-130			
Ethylbenzene	0.092	0.002	"	0.100	ND	92.2	62.2-130			
m,p-Xylene	0.178	0.004	"	0.200	ND	88.9	46.5-137			
o-Xylene	0.092	0.002	"	0.100	ND	91.6	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	59.5		ug/kg	62.5		95.2	70-130			
Surrogate: Toluene-d8	62.6		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63.4		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5C06012 - EPA 5030 (soil)**

Matrix Spike Dup (5C06012-MSD1)		Source: X503052-01			Prepared: 03/06/2015 Analyzed: 03/06/2015					
Benzene	0.090	0.002	mg/kg	0.100	ND	90.3	71.8-126	8.95	11.3	
Toluene	0.097	0.002	"	0.100	ND	96.8	65.1-130	2.55	15.4	
Ethylbenzene	0.094	0.002	"	0.100	ND	93.6	62.2-130	1.48	19.6	
m,p-Xylene	0.194	0.004	"	0.200	ND	96.8	46.5-137	8.54	19.2	
o-Xylene	0.095	0.002	"	0.100	ND	95.2	54.2-134	3.88	17.9	
Surrogate: 1,2-Dichloroethane-d4	54.4		ug/kg	62.5		87.1	70-130			
Surrogate: Toluene-d8	62.9		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63.8		"	62.5		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**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
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**Batch 5C06011 - EPA 3580**

**Blank (5C06011-BLK1)**

Prepared: 03/06/2015 Analyzed: 03/08/2015

Diesel (C10-C28) ND 50 mg/kg

Residual Range Organics (C28-C36) ND 200 "

Surrogate: o-Terphenyl 53 " 50.0 107 59-131

**LCS (5C06011-BS1)**

Prepared: 03/06/2015 Analyzed: 03/06/2015

Diesel (C10-C28) 990 50 mg/kg 1000 99.4 64-121

Residual Range Organics (C28-C36) 1000 200 " 1000 100 58-124

Surrogate: o-Terphenyl 50 " 50.0 99.5 59-131

**Matrix Spike (5C06011-MS1)**

**Source: X503052-01**

Prepared: 03/06/2015 Analyzed: 03/06/2015

Diesel (C10-C28) 1000 50 mg/kg 1000 34 98.3 53-125

Residual Range Organics (C28-C36) 1000 200 " 1000 37 99.5 47-133

Surrogate: o-Terphenyl 48 " 50.0 97.0 59-131

**Matrix Spike Dup (5C06011-MSD1)**

**Source: X503052-01**

Prepared: 03/06/2015 Analyzed: 03/06/2015

Diesel (C10-C28) 970 50 mg/kg 1000 34 93.8 53-125 4.47 20

Residual Range Organics (C28-C36) 980 200 " 1000 37 94.6 47-133 4.94 20

Surrogate: o-Terphenyl 46 " 50.0 92.3 59-131

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

## 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 5C06015 - NO PREP</b>										
<b>Duplicate (5C06015-DUP1)</b>		<b>Source: X503054-01</b>			Prepared: 03/06/2015 Analyzed: 03/06/2015					
pH	8.37		pH Units		8.45			0.951	25	
<b>Batch 5C06016 - NO PREP</b>										
<b>Blank (5C06016-BLK1)</b>		Prepared: 03/06/2015 Analyzed: 03/06/2015								
Specific Conductance (EC)	0.00210		mmhos/cm							
<b>Duplicate (5C06016-DUP1)</b>		<b>Source: X503054-01</b>			Prepared: 03/06/2015 Analyzed: 03/06/2015					
Specific Conductance (EC)	0.0836		mmhos/cm		0.0859			2.71	25	

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: KMG - HSR Corvi 2-36

### Notes and Definitions

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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.*

Jen Pellegrini For Noelle Doyle Mathis, President



March 11, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - HSR Corvi 2-36**

**Project Number - [none]**

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. March 11, 2015. This project is associated with Origins project number X503105-01.

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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: KMG - HSR Corvi 2-36

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W-BH05 @ 15-17'	X503105-01	Soil	March 10, 2015 11:15	03/11/2015 06:00
NW-BH06 @ 14-16'	X503105-03	Soil	March 10, 2015 14:10	03/11/2015 06:00

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

ORIGINS

LABORATORY INC.

XS030105

FORM 101-01 (REV. 03-15-2005)

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

page 1 of 1

Client: APL / USMVM

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Project Manager: Christine W. W.

Project Name: HSE Cont 2-30

Project Number: N04 88724899

Samples Collected By: C. W. W.

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Asbestos	Other			
NW-BH05015171	3/10/15	1115	1	X					X		8200 BTFM, 600			1
NW-BH050221	3/10/15	1445	2	X					X		8015 DEP, 200		HOLD	2
NW-BH06014161	3/10/15	1410	2	X					X		PH, EC - HADWZ			3
NW-BH060221	3/10/15	1440	1	X					X				HOLD	4
														5
														6
														7
														8
														9
														10
Relinquished By: <u>Brandon LeVasseur</u>	Date: <u>3-11-15</u>	Time: <u>600</u>											Turnaround Time: <u>Same Day</u>	
Relinquished By: _____	Date: _____	Time: _____											48 Hr <input type="checkbox"/>	72 Hr <input type="checkbox"/>

4.6.0

Data Results Needed

Origins Laboratory, Inc.

Jeff Pellipini

*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.*



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X503105

Client: Tasman

Client Project ID: HSR Corvi 2-36

Checklist Completed by: Jen Pellegrini

Date/time completed: 3/11/15

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

Airbill #: N/A

Matrix(s) Received: (Check all that apply): X Soil/Solid      Water      Other:     

Cooler Number/Temperature: 1 / 4.9 °C      /      °C      /      °C (Describe)      °C

Thermometer ID: T003

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> ?	✓			
Is there ice present (document if blue ice is used)	✓			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Were all samples received intact <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	✓			
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	✓			pH
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			✓	
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)			✓	
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) Jen Pellegrini

3/11/15  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jen Pellegrini*

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

W-BH05 @ 15-17'

3/10/2015 11:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X503105-01 (Soil)**

**BTEX by EPA 8260C**

Benzene	ND	0.002	mg/kg	1	5C10016	03/11/2015	03/11/2015
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	112 %	70-130			"	"	"
Surrogate: Toluene-d8	113 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	99.7 %	70-130			"	"	"

**pH in Soil by EPA 9045D**

pH	8.93		pH Units	1	5C11005	03/11/2015	03/11/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.0912		mmhos/cm	"	5C11004	03/11/2015	03/11/2015
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**TPH-Carbon Chain by EPA Method 8015C**

Gasoline (C6-C10)	ND	50	mg/kg	1	5C10015	03/10/2015	03/11/2015
Diesel (C10-C28)	ND	50	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	122 %	65-146			"	"	"
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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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

NW-BH06 @ 14-16'  
3/10/2015 2:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X503105-03 (Soil)**

**BTEX by EPA 8260C**

Benzene	1.06	0.498	mg/kg	250	5C10016	03/11/2015	03/11/2015
Toluene	24.3	0.498	"	"	"	"	"
Ethylbenzene	3.05	0.498	"	"	"	"	"
Xylenes, total	43.7	0.498	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	118 %	70-130			"	"	"
Surrogate: Toluene-d8	117 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"

**pH in Soil by EPA 9045D**

pH	8.98		pH Units	1	5C11005	03/11/2015	03/11/2015
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.147		mmhos/cm	"	5C11004	03/11/2015	03/11/2015
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**TPH-Carbon Chain by EPA Method 8015C**

Gasoline (C6-C10)	420	50	mg/kg	1	5C10015	03/10/2015	03/11/2015
Diesel (C10-C28)	150	50	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	109 %	65-146			"	"	"
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Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5C10016 - EPA 5030 (soil)</b>										
<b>Matrix Spike (5C10016-MS1)</b>		<b>Source: X503102-01</b>			Prepared: 03/10/2015 Analyzed: 03/10/2015					
Benzene	0.016	0.002	mg/kg	0.100	ND	15.8	71.8-126			QM-07
Toluene	0.016	0.002	"	0.100	ND	16.1	65.1-130			QM-07
Ethylbenzene	0.011	0.002	"	0.100	ND	11.2	62.2-130			QM-07
m,p-Xylene	0.026	0.004	"	0.200	0.001	12.6	46.5-137			QM-07
o-Xylene	0.013	0.002	"	0.100	0.001	11.8	54.2-134			QM-07
Surrogate: 1,2-Dichloroethane-d4	72		ug/kg	62.5		115	70-130			
Surrogate: Toluene-d8	67		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	68		"	62.5		108	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5C10016 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (5C10016-MSD1)</b>	<b>Source: X503102-01</b>				Prepared: 03/10/2015 Analyzed: 03/10/2015					
Benzene	0.069	0.002	mg/kg	0.100	ND	69.3	71.8-126	126	11.3	QM-07
Toluene	0.066	0.002	"	0.100	ND	66.3	65.1-130	122	15.4	QM-07
Ethylbenzene	0.040	0.002	"	0.100	ND	39.6	62.2-130	112	19.6	QM-07
m,p-Xylene	0.088	0.004	"	0.200	0.001	43.3	46.5-137	107	19.2	QM-07
o-Xylene	0.045	0.002	"	0.100	0.001	43.6	54.2-134	110	17.9	QM-07
Surrogate: 1,2-Dichloroethane-d4	70		ug/kg	62.5		112	70-130			
Surrogate: Toluene-d8	68		"	62.5		109	70-130			
Surrogate: 4-Bromofluorobenzene	68		"	62.5		109	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**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
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**Batch 5C10015 - EPA 3580**

**Blank (5C10015-BLK1)**

Prepared: 03/10/2015 Analyzed: 03/10/2015

Gasoline (C6-C10)	ND	50	mg/kg
Diesel (C10-C28)	ND	50	"
Residual Range Organics (C28-C36)	ND	200	"

Surrogate: o-Terphenyl

44.9

"

50.0

89.9

65-146

**LCS (5C10015-BS1)**

Prepared: 03/10/2015 Analyzed: 03/10/2015

Gasoline (C6-C10)	1000	50	mg/kg	1000	105	66.7-119
Diesel (C10-C28)	1100	50	"	1000	107	70.1-127
Residual Range Organics (C28-C36)	690	200	"	1000	68.7	54.5-139

Surrogate: o-Terphenyl

52.8

"

50.0

106

65-146

**Matrix Spike (5C10015-MS1)**

Source: X503102-01

Prepared: 03/10/2015 Analyzed: 03/10/2015

Gasoline (C6-C10)	840	50	mg/kg	1000	ND	84.0	56.4-132
Diesel (C10-C28)	910	50	"	1000	24	88.4	57.4-138
Residual Range Organics (C28-C36)	560	200	"	1000	20	53.9	47.7-129

Surrogate: o-Terphenyl

33.0

"

50.0

65.9

65-146

**Matrix Spike Dup (5C10015-MSD1)**

Source: X503102-01

Prepared: 03/10/2015 Analyzed: 03/10/2015

Gasoline (C6-C10)	830	50	mg/kg	1000	ND	82.9	56.4-132	1.27	22
Diesel (C10-C28)	880	50	"	1000	24	85.2	57.4-138	3.64	18.3
Residual Range Organics (C28-C36)	550	200	"	1000	20	52.6	47.7-129	2.21	30.1

Surrogate: o-Terphenyl

31.8

"

50.0

63.7

65-146

S-04

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

## 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 5C11004 - NO PREP</b>										
<b>Blank (5C11004-BLK1)</b>					Prepared: 03/11/2015 Analyzed: 03/11/2015					
Specific Conductance (EC)	0.00210		mmhos/cm							
<b>Duplicate (5C11004-DUP1)</b>					<b>Source: X503105-01</b> Prepared: 03/11/2015 Analyzed: 03/11/2015					
Specific Conductance (EC)	0.0856		mmhos/cm		0.0912			6.33	25	
<b>Batch 5C11005 - NO PREP</b>										
<b>Duplicate (5C11005-DUP1)</b>					<b>Source: X503105-01</b> Prepared: 03/11/2015 Analyzed: 03/11/2015					
pH	8.97		pH Units		8.93			0.447	25	

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: KMG - HSR Corvi 2-36

### Notes and Definitions

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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.*





September 03, 2015

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - HSR Corvi 2-36

Project Number - [none]

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. August 21, 2015. This project is associated with Origins project number ZT013TE-05.

The analytical results in the following report were analyzed under the guidelines of ASTM Methods. These methods are identified as follows: WS48 are defined in ASTM D1556, and WS48 are defined in ASTM D1556 and WS48 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 in the attached Chain of Custody. As such, this report shall not be reproduced in full, without the written approval of Origins Laboratory.

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

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory 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.  
303.533.5322  
info@originslabinc.com



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

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## CROSS R; x; R; q C; R; " ORp

SaXj le IB	Laboratory IB	Matri'	Bate SaXj led	Bate Received
: H50 9 56-51U	z T013TE-05	Soil	August 2T, 205T 50[00	017217205T 5T[3T
: H55 9 51-20U	z T013TE-02	Soil	August 2T, 205T 55[3T	017217205T 5T[3T

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X508359

ORIGINS  
LABORATORY, INC

page 1 of 1

Client:	Tasman Geosciences	Project Manager:	Bob CorneP
Address:	6899 Pecos St. Unit C, Denver, CO	Project Name:	HSR CORVI 2-36
Telephone Number:	303-912-2625	Project Number:	HSR CORVI 2-36
Email Address:	DWADE@TASMAN-LED.COM	Samples Collected By:	DAN WADE

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa			Other
BH10 @ 16-18'	8/25/15	1000	1	X					X				1
BH11 @ 18-20'	8/25/15	1135	1	X					X				2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
AMALUNG 3:35	8/25/15		8/25/15	8/25/15	1535	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

Date Results Needed

47

Origins Laboratory, Inc.

*Jeff Pellegri*

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Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XS08359

Client: Tasman

Client Project ID: HSR Corvi 2-36

Checklist Completed by: Jeff Smith

Shipped Via: DeKup

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

Date/time completed: 8/31/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 4.2 °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 ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" 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 checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<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 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 (Project Manager) Jeff Smith

Date/Time Reviewed 8/31/15

Origins Laboratory, Inc.

*Jeff Pellgrini*

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BH10 @ 16-18'

8/25/2015 10:00:00AM

Analyte	Result	Rej orting LiX it	Nnits	Bilution	: atch	" rej ared	AnalyPed	q otes
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Origins Laboratory, Inc.

X508359-01 (Soil)

## DRO/RRO by EPA8015C

Biesel (C50-C21)	qB	T0	Xg7@	5	T10500J	0E05Z05T	0E05Z05T
Residual Range Organics (C21-C36)	qB	200	8	8	8	8	8

guro: ate" o-Terphenyl 00.%S 59-131 " " 7

## GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	197	T.00	Xg7@	2T	T105001	0E05Z05T	0E05Z05T
: enPene	qB	0.0T0	8	8	8	8	8
poluene	qB	0.0T0	8	8	8	8	8
; thylbenPene	0.300	0.0T0	8	8	8	8	8
z ylenes, total	1.92	0.0T0	8	8	8	8	8

guro: ate" 1D-4 ichloroethane-d6 11, S 0, -13, " " 7  
guro: ate" Toluene-d% 113 S 0, -13, " " 7  
guro: ate" 6-Bromofluorobenzene 1, 8 S 0, -13, " " 7

Origins Laboratory, Inc.

*Jeff Pellegri*

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BH11 @ 18-20'

8/25/2015 11:35:00AM

Analyte	Result	Rej orting LiX it	Nnits	Bilution	: atch	" rej ared	AnalyPed	q otes
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Origins Laboratory, Inc.

X508359-02 (Soil)

## DRO/RRO by EPA8015C

Biesel (C50-C21)	qB	T0	Xg7@	5	T10500J	0E05Z05T	0E05Z05T
Residual Range Organics (C21-C36)	qB	200	8	8	8	8	8

guro: ate" o-Terphenyl	1D, S	59-131			"	"	7
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## GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	7.24	T.00	Xg7@	2T	T105001	0E05Z05T	0E05Z05T
: enPene	qB	0.0T0	8	8	8	8	8
poluene	qB	0.0T0	8	8	8	8	8
; thylbenPene	qB	0.0T0	8	8	8	8	8
z ylenes, total	qB	0.0T0	8	8	8	8	8

guro: ate" 1D-4 ichloroethane-d6	1, %S	0, -13,			"	"	7
guro: ate" Toluene-d%	1, 1 S	0, -13,			"	"	7
guro: ate" 6-Bromofluorobenzene	1, 5 S	0, -13,			"	"	7

Origins Laboratory, Inc.

*Jeff Pellegri*

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## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Rej orting LiX it	Nnits	Sj i@ Level	Source Result	%R; C	%R; C LiX its	R" B	R" B LiX it	q otes
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Batch 5101008 - EPA 5030 (soil)

Blank (5101008-BLK1)

" rej ared[ 0E05Z05T AnalyPed[ 0E05Z05T

Gasoline Range Hydrocarbons	qB	0.200	Xg7@							
: enPene	qB	0.002	8							
poluene	qB	0.002	8							
; thylbenPene	qB	0.002	8							
z ylenes, total	qB	0.002	8							
g urro: ate" 1D-4 ichloroethane-d6	8, .%		u: /k:	8L.5		90.L		0, -13,		
g urro: ate" Toluene-d%	81.,		7	8L.5		90.5		0, -13,		
g urro: ate" 6-Bromofluorobenzene	81.L		7	8L.5		9%,		0, -13,		

Origins Laboratory, Inc.



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## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Rej orting LiX it	Nnits	Sj i@ Level	Source Result	%R; C	%R; C LiX its	R" B	R" B LiX it	q otes
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Batch 5101008 - EPA 5030 (soil)

LCS (5101008-BS1)

" rej ared[ 0E05Z205T AnalyPed[ 0E05Z205T

: enPene	0.503	0.002	Xg7@	0.500	503	JJ.5-52F
poluene	0.502	0.002	8	0.500	502	JF.T-521
; thylbenPene	0.503	0.002	8	0.500	503	66.F-52J
X.j -zylene	0.205	0.00F	8	0.200	505	J6.6-52F
o-zylene	0.503	0.002	8	0.500	503	J6.6-52F
guro: ate" 1D-4 ichloroethane-d6	81.%		u: /k:	8L.5	9%.%	0, -13,
guro: ate" Toluene-d%	81.%		7	8L.5	9%.9	0, -13,
guro: ate" 6-Bromofluorobenzene	81.%		7	8L.5	9%.9	0, -13,

Origins Laboratory, Inc.



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## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Rej orting LiX it	Nnits	Sj i@ Level	Source Result	%R; C	%R; C LiX its	R" B	R" B LiX it	q otes
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Batch 5101008 - EPA 5030 (soil)

Matrix Spike (5101008-MS1)		Source: X508367-01			" rej ared[ 0E05Z205T AnalyPed[ 0E05Z205T					
: enPene	0.505	0.002	Xg7@	0.500	0.0006	500	J5.1-526			
poluene	0.50J	0.002	8	0.500	0.00J	500	6T.5-530			
; thylbenPene	0.50J	0.002	8	0.500	0.00F	503	62.2-530			
X.j -zylene	0.201	0.00F	8	0.200	0.053	EJ.J	F6.T-53J			
o-zylene	0.50T	0.002	8	0.500	0.006	E1.3	TF.2-53F			
guro: ate" 1D-4 ichloroethane-d6	86.0		u: /k:	8L.5		1, 6	0, -13,			
guro: ate" Toluene-d%	81.1		7	8L.5		90.%	0, -13,			
guro: ate" 6-Bromofluorobenzene	8L.0		7	8L.5		1, ,	0, -13,			

Origins Laboratory, Inc.



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" rowect[ KMG - HSR Corvi 2-36

## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Rej orting LiX it	Nnits	Sj i@ Level	Source Result	%R; C	%R; C LiX its	R" B	R" B LiX it	q otes
---------	--------	----------------------	-------	----------------	------------------	-------	------------------	------	----------------	--------

Batch 5101008 - EPA 5030 (soil)

Matrix Spike Dup (5101008-MSD1)		Source: X508367-01			" rej ared[ 0E05Z205T AnalyPed[ 0E05Z205T					
: enPene	0.0T5	0.002	Xg7@	0.0T00	0.0006	505	J5.1-526	6T.T	55.3	QR-02
poluene	0.0T3	0.002	8	0.0T00	0.00J	E3.J	6T.5-530	66.T	5T.F	QR-02
; thylbenPene	0.0F1	0.002	8	0.0T00	0.00F	11.3	62.2-530	J6.0	5E.6	QR-02
X,j -zylene	0.505	0.00F	8	0.500	0.053	11.5	F6.T-53J	6E.T	5E.2	QR-02
o-zylene	0.0T0	0.002	8	0.0T00	0.006	1J.0	TF.2-53F	J5.0	5J.E	QR-02
guro: ate" 1D-4 ichloroethane-d6	8%.1		u: /k:	8L.5		1, 9	0, -13,			
guro: ate" Toluene-d%	83.5		7	8L.5		1, D	0, -13,			
guro: ate" 6-Bromofluorobenzene	8L.%		7	8L.5		1, ,	0, -13,			

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" rowect[ KMG - HSR Corvi 2-36

## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Rej orting LiX it	Nnits	Sj i@ Level	Source Result	%R; C	%R; C LiX its	R" B	R" B LiX it	q otes
---------	--------	----------------------	-------	----------------	------------------	-------	------------------	------	----------------	--------

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Rej orting LiX it	Nnits	Sj i@ Level	Source Result	%R; C	%R; C LiX its	R" B	R" B LiX it	q otes
---------	--------	----------------------	-------	----------------	------------------	-------	------------------	------	----------------	--------

#### Batch 5101007 - EPA 3580

#### Blank (5101007-BLK1)

" rej aredf[ 0E05Z05T AnalyPed[ 0E05Z05T

Biesel (C50-C21) qB T0 Xg7@

Residual Range Organics (C21-C36) qB 200 8

guro: ate" o-Terphenyl 81 7 5. .. 100 59-131

#### LCS (5101007-BS1)

" rej aredf[ 0E05Z05T AnalyPed[ 0E05Z05T

Biesel (C50-C21) E00 T0 Xg7@ 5000 1E.T 6F-525

Residual Range Organics (C21-C36) 5000 200 8 5000 500 T1-52F

guro: ate" o-Terphenyl 53 7 5. .. 1, 5 59-131

#### Matrix Spike (5101007-MS1)

Source: X508367-01

" rej aredf[ 0E05Z05T AnalyPed[ 0E05Z05T

Biesel (C50-C21) 1F0 T0 Xg7@ 5000 63 JJ.3 T3-52T

Residual Range Organics (C21-C36) ET0 200 8 5000 J2 1J.T FJ-533

guro: ate" o-Terphenyl 60 7 5. .. 93.6 59-131

#### Matrix Spike Dup (5101007-MSD1)

Source: X508367-01

" rej aredf[ 0E05Z05T AnalyPed[ 0E05Z05T

Biesel (C50-C21) 120 T0 Xg7@ 5000 63 JT.6 T3-52T 2.05 20

Residual Range Organics (C21-C36) E00 200 8 5000 J2 12.3 FJ-533 T.6T 20

guro: ate" o-Terphenyl 68 7 5. .. 90.9 59-131

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" rowect[ KMG - HSR Corvi 2-36

## Notes and Definitions

QR-02 phe R" B result e' ceeded the QC control liX its. Whomever, both j ercent recoveries mere accej table. SaXj le results for the QC batch mere accej ted based on j ercent recoveries and coXj leteness of QC data.

q B Analyte q Op B; p; Cp; B at or above the rej orting liX it

R" B Relative " ercent Bifference

All soil results are rej orted at a met meight basis.

Origins Laboratory, Inc.



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March 12, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - HSR Corvi 2-36**

**Project Number - 88724899**

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. March 11, 2015. This project is associated with Origins project number X503127-01.

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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W-BH05	X503127-01	Water	March 11, 2015 14:00	03/11/2015 17:00
NW-BH06	X503127-02	Water	March 11, 2015 14:15	03/11/2015 17:00
N-BH04	X503127-03	Water	March 11, 2015 13:45	03/11/2015 17:00
N-BH03	X503127-04	Water	March 11, 2015 14:45	03/11/2015 17:00
W-BH02	X503127-05	Water	March 11, 2015 14:30	03/11/2015 17:00
S-BH01	X503127-06	Water	March 11, 2015 13:30	03/11/2015 17:00

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

www.originslaboratory.com

X803127

ORIGINS  
LABORATORY, INC

page 1 of 1

Client: APC / Tasman  
Address: 6899 Pecos Street, Unit C, Denver, CO 80211  
Telephone Number: 303 487 1228  
Email Address: Christine.Wasko@tasman-geo.com

Project Manager: CHRISTINE WASKO  
Project Name: HSR Corvi 2-36  
Project Number: 88724899  
Samples Collected By: Andrew Fisher

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #			Other
W-BH05	3/11/15	1400	3		X			X					1
NW-BH06	3/11/15	1415	3		X			X					2
N-BH04	3/11/15	1345	3		X			X					3
N-BH03	3/11/15	1445	3		X			X					4
W-BH02	3/11/15	1430	3		X			X					5
S-BH01	3/11/15	1330	3		X			X					6
													7
													8
													9
													10

Relinquished By: [Signature] Date: 3/11/15 Time: 1700  
Relinquished By: [Signature] Date: 3/11/15 Time: 1700

Turnaround Time: ☒ Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr

Date Results Needed: [Blank Box]

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XS03127

Client: Tasman

Client Project ID: HSR Corvi 2-36

Checklist Completed by: Jeff Smith

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

Date/time completed: 3/11/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 10.2 °C 1 / 10.2 °C 1 / 10.2 °C (Describe)

Thermometer ID: TW03

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"/>		<u>Sampled Some Dry</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" 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 checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<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 checked="" type="checkbox"/>			<u>Itcc</u>
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 be taken in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

Date/Time Reviewed

Origins Laboratory, Inc.

*Jeff Pellegrini*

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

## W-BH05

3/11/2015 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X503127-01 (Water)

### BTEX by EPA 8260C

Benzene	75.5	1.0	ug/L	1	5C11013	03/11/2015	03/11/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	65.4	1.0	"	"	"	"	"	
Xylenes, total	346	10.0	"	10	"	"	03/11/2015	

Surrogate: 1,2-Dichloroethane-d4	106 %	87.3-113			"	"	03/11/2015	
Surrogate: Toluene-d8	97.5 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	111 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

NW-BH06  
3/11/2015 2:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X503127-02 (Water)**

**BTEX by EPA 8260C**

Benzene	13900	500	ug/L	500	5C11013	03/11/2015	03/11/2015
Toluene	20500	500	"	"	"	"	"
Ethylbenzene	760	50.0	"	50	"	"	03/11/2015
Xylenes, total	11800	50.0	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	105 %	87.3-113			"	"	"
Surrogate: Toluene-d8	97.8 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	109 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

N-BH04

3/11/2015 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X503127-03 (Water)**

**BTEX by EPA 8260C**

Benzene	334	50.0	ug/L	50	5C11013	03/11/2015	03/11/2015
Toluene	3700	50.0	"	"	"	"	"
Ethylbenzene	722	50.0	"	"	"	"	"
Xylenes, total	9660	50.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	105 %	87.3-113			"	"	"
Surrogate: Toluene-d8	97.3 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	111 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

N-BH03

3/11/2015 2:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X503127-04 (Water)

## BTEX by EPA 8260C

Benzene	720	50.0	ug/L	50	5C11013	03/11/2015	03/11/2015
Toluene	4140	50.0	"	"	"	"	"
Ethylbenzene	258	50.0	"	"	"	"	"
Xylenes, total	4380	50.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	106 %	87.3-113			"	"	"
Surrogate: Toluene-d8	97.1 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	109 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

## W-BH02

3/11/2015 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X503127-05 (Water)

### BTEX by EPA 8260C

Benzene	1350	50.0	ug/L	50	5C11013	03/11/2015	03/11/2015
Toluene	944	50.0	"	"	"	"	"
Ethylbenzene	144	50.0	"	"	"	"	"
Xylenes, total	1900	50.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	105 %	87.3-113			"	"	"
Surrogate: Toluene-d8	95.9 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	109 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

## S-BH01

3/11/2015 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X503127-06 (Water)

### BTEX by EPA 8260C

Benzene	3.4	1.0	ug/L	1	5C11013	03/11/2015	03/11/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	4.2	1.0	"	"	"	"	"
Xylenes, total	23.6	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	106 %	87.3-113			"	"	"
Surrogate: Toluene-d8	97.9 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	110 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5C11013 - EPA 5030B (Water)**

**Blank (5C11013-BLK1)**

Prepared: 03/11/2015 Analyzed: 03/11/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5	106		87.3-113			
Surrogate: Toluene-d8	60		"	62.5	96.5		90.9-108			
Surrogate: 4-Bromofluorobenzene	70		"	62.5	112		88.6-111			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5C11013 - EPA 5030B (Water)**

**LCS (5C11013-BS1)**

Prepared: 03/11/2015 Analyzed: 03/11/2015

Benzene	54.3	1.0	ug/L	50.0	109	75-126
Toluene	50.3	1.0	"	50.0	101	78.7-126
Ethylbenzene	49.0	1.0	"	50.0	98.1	80-130
m,p-Xylene	99.2	2.0	"	100	99.2	77.2-133
o-Xylene	50.9	1.0	"	50.0	102	77.9-126
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5	99.0	87.3-113
Surrogate: Toluene-d8	60		"	62.5	96.2	90.9-108
Surrogate: 4-Bromofluorobenzene	70		"	62.5	111	88.6-111

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5C11013 - EPA 5030B (Water)**

Matrix Spike (5C11013-MS1)		Source: X503125-01			Prepared: 03/11/2015 Analyzed: 03/11/2015					
Benzene	49.2	1.0	ug/L	50.0	ND	98.3	74-130			
Toluene	45.1	1.0	"	50.0	ND	90.2	73-131			
Ethylbenzene	41.5	1.0	"	50.0	ND	82.9	76-132			
m,p-Xylene	85.5	2.0	"	100	0.3	85.2	69-139			
o-Xylene	45.5	1.0	"	50.0	ND	91.1	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.1	87.3-113			
Surrogate: Toluene-d8	60		"	62.5		95.7	90.9-108			
Surrogate: 4-Bromofluorobenzene	70		"	62.5		112	88.6-111			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: 88724899  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5C11013 - EPA 5030B (Water)**

Matrix Spike Dup (5C11013-MSD1)		Source: X503125-01			Prepared: 03/11/2015 Analyzed: 03/11/2015					
Benzene	42.2	1.0	ug/L	50.0	ND	84.5	74-130	15.2	20	
Toluene	38.3	1.0	"	50.0	ND	76.7	73-131	16.2	20	
Ethylbenzene	34.6	1.0	"	50.0	ND	69.2	76-132	18.0	20	QM-07
m,p-Xylene	71.9	2.0	"	100	0.3	71.6	69-139	17.3	20	
o-Xylene	39.5	1.0	"	50.0	ND	79.0	74-131	14.2	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.5	87.3-113			
Surrogate: Toluene-d8	60		"	62.5		95.6	90.9-108			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		110	88.6-111			

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.

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: 88724899

Project: KMG - HSR Corvi 2-36

### Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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.*

Jen Pellegrini For Noelle Doyle Mathis, President

September 15, 2015

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - HSR Corvi 2-36**

**Project Number - [none]**

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. September 08, 2015. This project is associated with Origins project number X509103-01.

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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	X509103-01	Water	September 8, 2015 13:30	09/08/2015 16:30
BH02	X509103-02	Water	September 8, 2015 13:25	09/08/2015 16:30
BH03	X509103-03	Water	September 8, 2015 13:36	09/08/2015 16:30
BH04	X509103-04	Water	September 8, 2015 13:41	09/08/2015 16:30
BH05	X509103-05	Water	September 8, 2015 13:48	09/08/2015 16:30
BH06	X509103-06	Water	September 8, 2015 13:56	09/08/2015 16:30
BH07	X509103-07	Water	September 8, 2015 14:33	09/08/2015 16:30
BH08	X509103-08	Water	September 8, 2015 14:31	09/08/2015 16:30
BH09	X509103-09	Water	September 8, 2015 14:39	09/08/2015 16:30
BH10	X509103-10	Water	September 8, 2015 13:57	09/08/2015 16:30

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.*

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - HSR Corvi 2-36

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH11	X509103-11	Water	September 8, 2015 14:06	09/08/2015 16:30

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.*

Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

www.originslaboratory.com

X509103

ORIGINS  
LABORATORY, INC

page 1 of 2

Client: Tasman Geosciences  
Address: [blank]  
Telephone Number: 352 262 9910  
Email Address: jcornez@tasmangeo.com

Project Manager: Bob Cornez  
Project Name: HSR Corvi 2-36  
Project Number: [blank]  
Samples Collected By: Kate Forsmark

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other		
BH01	9/8/15	1330	3	X	X	X		X	X	X		BKX8260	1
BH02		1325	1	X	X	X		X	X	X			2
BH03		1336	1	X	X	X		X	X	X			3
BH04		1341	1	X	X	X		X	X	X			4
BH05		1348	1	X	X	X		X	X	X			5
BH06		1356	1	X	X	X		X	X	X			6
BH07		1433	1	X	X	X		X	X	X			7
BH08		1431	1	X	X	X		X	X	X			8
BH09		1439	1	X	X	X		X	X	X			9
BH10		1357	1	X	X	X		X	X	X			10

Relinquished By: [Signature] Date: 9/8/15 Time: 1600  
Relinquished By: [Signature] Date: 9/8/15 Time: 1630

Received By: [Signature] Date: 9.8.15 Time: 1630  
Received By: [Signature] Date: [blank] Time: [blank]

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☒ Standard

Date Results Needed

4.1

Origins Laboratory, Inc.

*Jefe Pellegrini*

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

www.originslaboratory.com

X509103

ORIGINS  
LABORATORY, INC

page 2 of 2

Client: Tasman Geosciences  
Address:  
Telephone Number: 352 262 9910  
Email Address: [cornez@tasman-geo.com](mailto:cornez@tasman-geo.com)

Project Manager: Bob Cornez  
Project Name: HSR Corvi 2-36  
Project Number:  
Samples Collected By: Kate Forsmark

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #		
BH11	9/8/15	1400	3	X				X			BHX 8200	1
												2
												3
												4
												5
												6
												7
												8
												9
												10
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:						
<i>[Signature]</i>	9/8/15	1600	<i>[Signature]</i>	9.8.15	1600	Same Day <input type="checkbox"/>						
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	48 Hr <input type="checkbox"/>						
						72 Hr <input type="checkbox"/>						
						Standard <input checked="" type="checkbox"/>						

Date Results Needed

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

Origins Laboratory, Inc.

*Jefe Pellegrini*

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X509103

Client: Tasman

Client Project ID: KMG - HSR Corvi 2-36

Checklist Completed by: Jeff Smith

Shipped Via: Pickup

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

Date/time completed: 9/9/15

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.1 °C 1 °C 1 °C 1 °C

Thermometer ID: T003

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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCL
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) Jeff Smith

Date/Time Reviewed 9/9/15

Origins Laboratory, Inc.

*Jeff Pellegrini*

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH01

9/8/2015 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X509103-01 (Water)**

**BTEX by EPA 8260C**

Benzene	7.0	1.0	ug/L	1	5110009	09/10/2015	09/10/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	6.0	1.0	"	"	"	"	"
Xylenes, total	3.3	1.0	"	"	"	"	"

%uroSateg-:13 ichloroethane3d7	- 0- 6	873 1-			"	"	2
%uroSategToluene3d8	- 00 6	8D3 - D			"	"	2
%uroSateg734romofluorobenzene	- 00 6	873 - 7			"	"	2

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH02

9/8/2015 1:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X509103-02 (Water)**

**BTEX by EPA 8260C**

Benzene	3090	50.0	ug/L	50	5110009	09/10/2015	09/11/2015	
Toluene	2700	50.0	"	"	"	"	"	
Ethylbenzene	131	1.0	"	1	"	"	09/10/2015	
Xylenes, total	2010	50.0	"	50	"	"	09/11/2015	

%urroSateg- :13 ichloroethane3d7	8/ .7 6	873 1-			"	"	059 0910- D	
%urroSategToluene3d8	- 0/ 6	8D3 - D			"	"	2	
%urroSateg734romofluorobenzene	- 00 6	873 - 7			"	"	2	

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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH03

9/8/2015 1:36:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X509103-03 (Water)

## BTEX by EPA 8260C

Benzene	158	1.0	ug/L	1	5110009	09/10/2015	09/10/2015
Toluene	220	10.0	"	10	"	"	09/11/2015
Ethylbenzene	12.8	1.0	"	1	"	"	09/10/2015
Xylenes, total	297	1.0	"	"	"	"	"

%urroSateg- :13 ichloroethane3d7	- 00 6	873 1-	"	"	"	"	2
%urroSategToluene3d8	- 0/ 6	8D3 - D	"	"	"	"	2
%urroSateg734romofluorobenzene	- 0- 6	873 - 7	"	"	"	"	2

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH04

9/8/2015 1:41:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X509103-04 (Water)**

**BTEX by EPA 8260C**

Benzene	1000	100	ug/L	100	5110009	09/10/2015	09/14/2015
Toluene	6590	100	"	"	"	"	"
Ethylbenzene	575	100	"	"	"	"	"
Xylenes, total	8070	100	"	"	"	"	"

%urroSateg- :13 ichloroethane3d7	- 01 6	873 1-			"	"	059 0910- D
%urroSategToluene3d8	-- 0 6	8D3 - D			"	"	2
%urroSateg734romofluorobenzene	- 01 6	873 - 7			"	"	2

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH05

9/8/2015 1:48:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X509103-05 (Water)**

**BTEX by EPA 8260C**

Benzene	39.7	1.0	ug/L	1	5110009	09/10/2015	09/10/2015
Toluene	1.3	1.0	"	"	"	"	"
Ethylbenzene	4.5	1.0	"	"	"	"	"
Xylenes, total	10.9	1.0	"	"	"	"	"

%urroSateg- :13 ichloroethane3d7	58." 6	873 1-			"	"	2
%urroSategToluene3d8	- 0- 6	8D3 - D			"	"	2
%urroSateg734romofluorobenzene	- 01 6	873 - 7			"	"	2

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH06

9/8/2015 1:56:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X509103-06 (Water)**

**BTEX by EPA 8260C**

Benzene	4480	50.0	ug/L	50	5110009	09/10/2015	09/14/2015
Toluene	6010	50.0	"	"	"	"	"
Ethylbenzene	95.3	1.0	"	1	"	"	09/10/2015
Xylenes, total	3770	50.0	"	50	"	"	09/14/2015

%urroSateg- :13 ichloroethane3d7	85.B 6	873 1-			"	"	059 0910- D
%urroSategToluene3d8	- 01 6	8D3 - D			"	"	2
%urroSateg734romofluorobenzene	55./ 6	873 - 7			"	"	2

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH07

9/8/2015 2:33:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X509103-07 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5110009	09/10/2015	09/11/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

%uroSateg- :13 ichloroethane317	- 0- 6	873 1-		"	"	059 0910- D
%uroSategToluene318	- 00 6	8D3 - D		"	"	2
%uroSateg734romofluorobenzene	- 0B 6	873 - 7		"	"	2

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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH08

9/8/2015 2:31:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X509103-08 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5110009	09/10/2015	09/10/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

%uroSateg- :13 ichloroethane317	58/ 6	873 1-	"	"	2
%uroSategToluene318	- 00 6	8D3 - D	"	"	2
%uroSateg734romofluorobenzene	- 01 6	873 - 7	"	"	2

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH09

9/8/2015 2:39:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X509103-09 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5110009	09/10/2015	09/10/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

%uroSateg- :13 ichloroethane317	55.- 6	873 1-	"	"	2
%uroSategToluene318	- 00 6	8D3 - D	"	"	2
%uroSateg734romofluorobenzene	- 0- 6	873 - 7	"	"	2

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH10

9/8/2015 1:57:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X509103-10 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5110009	09/10/2015	09/10/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	2.7	1.0	"	"	"	"	"

%chloroethane	-016	8731-	"	"	2
%Toluene	-0-6	8D3-D	"	"	2
%p-fluorobenzene	-0-6	873-7	"	"	2

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH11  
9/8/2015 2:06:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X509103-11 (Water)**

**BTEX by EPA 8260C**

Benzene	1.7	1.0	ug/L	1	5110009	09/10/2015	09/10/2015
Toluene	2.6	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

%uroSateg- :13 ichloroethane3d7	- 0- 6	873 1-	"	"	2
%uroSategToluene3d8	- 0- 6	8D3 - D	"	"	2
%uroSateg734romofluorobenzene	- 0- 6	873 - 7	"	"	2

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.*

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

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

**Batch 5110009 - EPA 5030B (Water)**

**Blank (5110009-BLK1)**

Prepared: 09/10/2015 Analyzed: 09/10/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
%uroSateg- :13 ichloroethane3d7	/B		2	/ 1.D		- 00	87%- 1-			
%uroSategToluene3d8	/B		2	/ 1.D		- 0-	8C%- - C			
%uroSateg734romofluorobenzene	/B		2	/ 1.D		- 0-	87%- - 7			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

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

**Batch 5110009 - EPA 5030B (Water)**

**LCS (5110009-BS1)**

Prepared: 09/10/2015 Analyzed: 09/10/2015

Benzene	43.6	1.0	ug/L	50.0		87.1	75-126			
Toluene	44.8	1.0	"	50.0		89.6	78.7-126			
Ethylbenzene	46.3	1.0	"	50.0		92.5	80-130			
m,p-Xylene	92.1	2.0	"	100		92.1	77.2-133			
o-Xylene	45.4	1.0	"	50.0		90.9	77.9-126			
%uroSateg- :13 ichloroethane3d7	/ B		2	/ 1.D		- 0-	87%- 1-			
%uroSategToluene3d8	/ 7		2	/ 1.D		- 01	87%- - 1			
%uroSateg734romofluorobenzene	/ B		2	/ 1.D		- 00	87%- - 7			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

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

**Batch 5110009 - EPA 5030B (Water)**

Matrix Spike (5110009-MS1)		Source: X509101-02			Prepared: 09/10/2015 Analyzed: 09/10/2015					
Benzene	41.4	1.0	ug/L	50.0	ND	82.8	74-130			
Toluene	41.2	1.0	"	50.0	ND	82.4	73-131			
Ethylbenzene	41.0	1.0	"	50.0	ND	81.9	76-132			
m,p-Xylene	82.0	2.0	"	100	ND	82.0	69-139			
o-Xylene	41.0	1.0	"	50.0	ND	82.0	74-131			
%uroSateg- :13 ichloroethane3d7	D5		2	/ 1.D		57.0	87%- 1-			
%uroSategToluene3d8	/ B		2	/ 1.D		- 01	87%- - C			
%uroSateg73dromofluorobenzene	/ 1		2	/ 1.D		- 00	87%- - 7			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

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

**Batch 5110009 - EPA 5030B (Water)**

Matrix Spike Dup (5110009-MSD1)		Source: X509101-02			Prepared: 09/10/2015 Analyzed: 09/10/2015					
Benzene	48.3	1.0	ug/L	50.0	ND	96.7	74-130	15.4	20	
Toluene	47.7	1.0	"	50.0	ND	95.4	73-131	14.6	20	
Ethylbenzene	46.8	1.0	"	50.0	ND	93.6	76-132	13.2	20	
m,p-Xylene	93.1	2.0	"	100	ND	93.1	69-139	12.6	20	
o-Xylene	47.2	1.0	"	50.0	ND	94.3	74-131	14.0	20	
%uroSateg- :13 ichloroethane3d7	/ 0		2	/ 1.D		5C./	87%- 1-			
%uroSategToluene3d8	/ 6		2	/ 1.D		- 0-	8C%- - C			
%uroSateg73dromofluorobenzene	/ 7		2	/ 1.D		- 01	87%- - 7			

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6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - HSR Corvi 2-36

### 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.

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*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.*

Jen Pellegrini For Noelle Doyle Mathis, President



December 1p, 201p

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - HSR Corvi 2-36

Project Number - [none]

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. December 08, 2015. This project is associated with Origins project number 95121zz-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows: EPA 8460 are defined in EPA 826, EPA 821 are defined in 40 CFR part 136 and EPA 821 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 in 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

Tasman Geosciences

68 : : ecos Street, Unit C

penver CO 80211

Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

## CROSS RPFPRPNCP RP; ORT

Samj le lp	Laboratory lp	Matrix	p ate Samj led	p ate Received
S-BH01	95121zz-01	4 ater	pecember 8, 2015 1z[12	12/08/2015 15[2:
4 -BH02	95121zz-02	4 ater	pecember 8, 2015 13[28	12/08/2015 15[2:
N-BH03	95121zz-03	4 ater	pecember 8, 2015 13[z0	12/08/2015 15[2:
N-BH0z	95121zz-0z	4 ater	pecember 8, 2015 13[50	12/08/2015 15[2:
4 -BH05	95121zz-05	4 ater	pecember 8, 2015 13[5z	12/08/2015 15[2:
N4 -BH06	95121zz-06	4 ater	pecember 8, 2015 1z[02	12/08/2015 15[2:
BH07	95121zz-07	4 ater	pecember 8, 2015 12[z1	12/08/2015 15[2:
BH08	95121zz-08	4 ater	pecember 8, 2015 12[52	12/08/2015 15[2:
BH0:	95121zz-0:	4 ater	pecember 8, 2015 12[z2	12/08/2015 15[2:
BH10	95121zz-10	4 ater	pecember 8, 2015 1z[z3	12/08/2015 15[2:

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Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

## CROSS RPFPRPNCP RP; ORT

Samj le lp

Laboratory lp

Matrix

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BH11

95121zz-11

4 ater

p ecember 8, 2015 1z[32

12/08/2015 15[2:

Origins Laboratory, Inc.



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Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

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page 1 of 2

Robert CorneE

Project Manager/Send Report To: BOC@tasman-geo.com

Email Address: ↓ cEauvic: Phil Hamlin

Project Name/Number: HSR Corvi 2-36

Samples Collected By: Kevin W. Tyler B

Client: APC / Tasman

Address: 785-554-7588

Telephone Number: 785-554-7588

1725 Elk Place  
Phone: 303.433.1322  
Fax: 303.265.9645

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 Summary & Contaminant #	Other				
S-BH01	12/18/15	1412	3	X	X	X		X					X	1	BTEX
W-BH02	12/18/15	1328		X	X	X		X					X	2	
NW-BH03		1340		X	X	X		X					X	3	
N-BH04		1350		X	X	X		X					X	4	
W-BH05		1354		X	X	X		X					X	5	
NW-BH06		1402		X	X	X		X					X	6	
BH07		1241		X	X	X		X					X	7	
BH08		1252		X	X	X		X					X	8	
BH09		1242		X	X	X		X					X	9	
BH10		1443		X	X	X		X					X	10	
Relinquished By:	Date: 12/18/15	Time: 1529		Time: 1529	Received By:				Date: 12/18/15				Time: 1529	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	
Relinquished By:	Date:	Time:	Time:	Received By:				Date:				Time:			

Comments:

Date Results Needed:

12/1

Origins Laboratory, Inc.

Jefe Pellegrini

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; age 5 of 26

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Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 1512144

Client: Tasman

Client Project ID: HSR Corvi 2-36

Checklist Completed by: Joe Henderson

Shipped Via: H/D

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

Date/time completed: 12/9/15 1344

Airbill #: 111

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

Cooler Number/Temperature: 1 13.1 °C 1 °C 1 °C 1 °C (Describe)

Thermometer ID: TW3

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"/>		<u>Sampled Some Dry</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" 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 checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<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 checked="" type="checkbox"/>			<u>ACL</u>
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 12/14/15

Origins Laboratory, Inc.

*Joe Pellegrini*

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Tasman Geosciences

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penver CO 80211

Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

S-BH01

12/8/201p 2:12:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-01 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

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873 1-

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%urroSategToluene3d8

- 4- 6

8D3 - D

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%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

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Origins Laboratory, Inc.

*Jefe Pellegrini*

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; rowect[ KMG - HSR Corvi 2-36

W-BH02

12/8/201p 1:28:00PM

Analyte	Result	Rej orting Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-02 (Water)

## BTE5 by EPA 8260C

BenEene	2X60	20.0	ug/L	20	B5L1101	12/11/2015	12/11/2015
Toluene	933	20.0	W	W	W	W	W
PthylbenEene	78.8	20.0	W	W	W	W	W
9ylenes, total	928	20.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

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%urroSategToluene3d8

- 4- 6

8D3 - D

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%urroSateg73 romofluorobenzene

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Origins Laboratory, Inc.

*Jeff Pellegrini*

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; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

N-BH03

12/8/201p 1:X0:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-03 (Water)

## BTE5 by EPA 8260C

BenEene	p2.6	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	18.X	1.0	W	W	W	W	W
PthylbenEene	2.1	1.0	W	W	W	W	W
9ylenes, total	37.1	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7	00.8 6	873 1-			"	"	- 15 - 54- D
%urroSategToluene3d8	- 41 6	8D3 - D			"	"	2
%urroSateg73 romofluorobenzene	- 47 6	873 - 7			"	"	2

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; rowect[ KMG - HSR Corvi 2-36

N-BH0X

12/8/201p 1:p0:00PM

Analyte	Result	Rej orting Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-0X (Water)

## BTE5 by EPA 8260C

BenEene	176	20.0	ug/L	20	B5L1101	12/11/2015	12/12/2015
Toluene	X7X	20.0	W	W	W	W	W
PthylbenEene	280	20.0	W	W	W	W	W
9ylenes, total	3X80	20.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

09.D6

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- 15 - 54- D

%urroSategToluene3d8

- 44 6

8D3 - D

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%urroSateg73 romofluorobenzene

- 4" 6

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Origins Laboratory, Inc.

*Jeff Pellegri*

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Bob CorneE

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; rowect[ KMG - HSR Corvi 2-36

W-BH0n

12/8/201p 1:pX:00PM

Analyte	Result	Rej orting Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-0p (Water)

## BTE5 by EPA 8260C

BenEene	28.p	2.0	ug/L	2	B5L1101	12/11/2015	12/11/2015
Toluene	Np	2.0	W	W	W	W	W
PthylbenEene	38.8	2.0	W	W	W	W	W
9ylenes, total	127	2.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

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%urroSategToluene3d8

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8D3 - D

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%urroSateg73 romofluorobenzene

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Origins Laboratory, Inc.

*Jeff Pellegri*

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Bob CorneE

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; rowect[ KMG - HSR Corvi 2-36

NW-BH06

12/8/201p 2:02:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-06 (Water)

## BTE5 by EPA 8260C

BenEene	12200	200	ug/L	200	B5L1101	12/11/2015	12/11/2015
Toluene	11100	200	W	W	W	W	W
PthylbenEene	p98	200	W	W	W	W	W
9ylenes, total	10200	200	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

00.- 6

873 1-

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%urroSategToluene3d8

- 4- 6

8D3 - D

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%urroSateg73 romofluorobenzene

- 44 6

873 - 7

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*Jeff Pellegrini*

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Bob CorneE

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; rowect[ KMG - HSR Corvi 2-36

BH07

12/8/201p 12:X1:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-07 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

- 4" 6

873 1-

"

"

2

%urroSategToluene3d8

00.7 6

8D3 - D

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"

2

%urroSateg73 romofluorobenzene

- 41 6

873 - 7

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*Jefe Pellegrini*

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Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

BH08

12/8/201p 12:p2:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-08 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

08.B 6

873 1-

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%urroSategToluene3d8

- 4- 6

8D3 - D

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%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

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Origins Laboratory, Inc.

*Jefe Pellegrini*

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68: : ; ecos Street, Unit C

penver CO 80211

Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

BH09

12/8/201p 12:X2:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-09 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

00.D6

873 1-

"

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2

%urroSategToluene3d8

00.8 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

"

"

2

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

BH10

12/8/201p 2:X3:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
---------	--------	-------	-------	-----------	-------	------------	----------	-------

Origins Laboratory, Inc.

5p121XX-10 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

- 4- 6

873 1-

"

"

2

%urroSategToluene3d8

00.B 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

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"

2

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*Jeff Pellegri*

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; rowect[ KMG - HSR Corvi 2-36

BH11

12/8/201p 2:32:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
---------	--------	-------	-------	-----------	-------	------------	----------	-------

Origins Laboratory, Inc.

5p121XX-11 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

0B0 6

873 1-

"

"

2

%urroSategToluene3d8

- 4- 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 41 6

873 - 7

"

"

2

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*Jeff Pellegri*

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
---------	--------	---------------------	-------	-----------------	------------------	------	----------------	------	---------------	-------

Batch BpL1101 - EPA p030B (Water)

**Blank (BpL1101-BLK1)**

; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015

BenEene	Np	1.0	ug/L							
Toluene	Np	1.0	W							
PthylbenEene	Np	1.0	W							
9ylenes, total	Np	1.0	W							
%urroSateg- :13 ichloroethane3d7	B1		2	B1.D		08.9	87%- 1-			
%urroSategToluene3d8	B7		2	B1.D		- 41	8C%- - C			
%urroSateg73' romofluorobenzene	B"		2	B1.D		- 4-	87%- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
---------	--------	------------------	-------	--------------	---------------	------	-------------	------	------------	-------

Batch BpL1101 - EPA p030B (Water)

**Blank (BpL1101-BLK2)**

; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015

BenEene	Np	1.0	ug/L							
Toluene	Np	1.0	W							
PthylbenEene	Np	1.0	W							
9ylenes, total	Np	1.0	W							
%urroSateg- :13 ichloroethane3d7	B1		2	B1.D		00.4	87%- 1-			
%urroSategToluene3d8	B7		2	B1.D		- 41	8C%- - C			
%urroSateg73 romofluorobenzene	B1		2	B1.D		00.1	87%- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
---------	--------	------------------	-------	--------------	---------------	------	-------------	------	------------	-------

Batch BpL1101 - EPA p030B (Water)

LCS (BpL1101-BS1)

; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015

BenEene	5z.z	1.0	ug/L	50.0		10:	73.3-12:			
Toluene	53.3	1.0	W	50.0		107	76.2-123			
PthylbenEene	55.z	1.0	W	50.0		111	73.6-130			
m.j -9ylene	110	2.0	W	100		110	76.1-126			
o-9ylene	5z.2	1.0	W	50.0		108	76.6-12z			
%urroSateg- :13 ichloroethane3d7	D8		2	B1.D		0".B	87:- 1-			
%urroSategToluene3d8	B7		2	B1.D		- 41	8C:- - C			
%urroSateg73 romofluorobenzene	BC		2	B1.D		- 47	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
---------	--------	------------------	-------	--------------	---------------	------	-------------	------	------------	-------

Batch BpL1101 - EPA p030B (Water)

LCS (BpL1101-BS2)

; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015

BenEene	z6.6	1.0	ug/L	50.0		: 3.2	73.3-12:			
Toluene	zz.8	1.0	W	50.0		8: .6	76.2-123			
PthylbenEene	z5.5	1.0	W	50.0		: 1.0	73.6-130			
m.j -9ylene	: 0.3	2.0	W	100		: 0.3	76.1-126			
o-9ylene	z6.2	1.0	W	50.0		: 2.z	76.6-12z			
%urroSateg- :13 ichloroethane3d7	D0		2	B1.D		07.1	87:- 1-			
%urroSategToluene3d8	B"		2	B1.D		- 4-	8C:- - C			
%urroSateg73 romofluorobenzene	B7		2	B1.D		- 41	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
---------	--------	------------------	-------	--------------	---------------	------	-------------	------	------------	-------

Batch BpL1101 - EPA p030B (Water)

Matrix SI ike (BpL1101-MS1)		Source: 5p12136-02		; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015						
BenEene	z5.z	1.0	ug/L	50.0	Np	: 0.7	7z-130			
Toluene	z3.z	1.0	W	50.0	Np	86.8	73-131			
PthylbenEene	zz.2	1.0	W	50.0	Np	88.z	76-132			
m.j -9ylene	88.0	2.0	W	100	Np	88.0	6: -13:			
o-9ylene	z5.8	1.0	W	50.0	Np	: 1.5	7z-131			
%urroSateg- :13 ichloroethane3d7	D8		2	B1.D		01.B	87:- 1-			
%urroSategToluene3d8	B"		2	B1.D		- 4-	8C:- - C			
%urroSateg73 romofluorobenzene	B7		2	B1.D		- 41	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
---------	--------	------------------	-------	--------------	---------------	------	-------------	------	------------	-------

Batch BpL1101 - EPA p030B (Water)

Matrix SI ike (BpL1101-MS2)		Source: 5p12136-03		; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015						
BenEene	z6.7	1.0	ug/L	50.0	Np	: 3.z	7z-130			
Toluene	z5.7	1.0	W	50.0	Np	: 1.z	73-131			
PthylbenEene	z5.:	1.0	W	50.0	Np	: 1.8	76-132			
m.j -9ylene	: 1.7	2.0	W	100	Np	: 1.7	6: -13:			
o-9ylene	z8.1	1.0	W	50.0	Np	: 6.2	7z-131			
%urroSateg- :13 ichloroethane3d7	D9		2	B1.D		0- .4	87:- 1-			
%urroSategToluene3d8	B7		2	B1.D		- 4"	8C:- - C			
%urroSateg73 romofluorobenzene	B1		2	B1.D		08.9	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
---------	--------	------------------	-------	--------------	---------------	------	-------------	------	------------	-------

Batch BpL1101 - EPA p030B (Water)

Matrix SI ike Dul (BpL1101-MSD1)		Source: 5p12136-02		; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015						
BenEene	z5.:	1.0	ug/L	50.0	Np	: 1.:	7z-130	1.23	20	
Toluene	zz.6	1.0	W	50.0	Np	8: .1	73-131	2.66	20	
PthylbenEene	z5.1	1.0	W	50.0	Np	: 0.2	76-132	2.02	20	
m.j -9ylene	8: .6	2.0	W	100	Np	8: .6	6: -13:	1.8z	20	
o-9ylene	z6.8	1.0	W	50.0	Np	: 3.7	7z-131	2.33	20	
%urroSateg- :13 ichloroethane3d7	DB		2	B1.D		04.7	87:- 1-			
%urroSategToluene3d8	B"		2	B1.D		- 4-	8E:- - E			
%urroSateg73 romofluorobenzene	B1		2	B1.D		00.9	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
---------	--------	------------------	-------	--------------	---------------	------	-------------	------	------------	-------

Batch BpL1101 - EPA p030B (Water)

Matrix SI ike Dul (BpL1101-MSD2)		Source: 5p12136-03		; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015						
BenEene	z6.6	1.0	ug/L	50.0	Np	: 3.3	7z-130	0.12:	20	
Toluene	zz.2	1.0	W	50.0	Np	88.5	73-131	3.25	20	
PthylbenEene	zz.8	1.0	W	50.0	Np	8: .6	76-132	2.38	20	
m.j -9ylene	8: .:	2.0	W	100	Np	8: .:	6: -13:	2.02	20	
o-9ylene	z6.3	1.0	W	50.0	Np	: 2.7	7z-131	3.73	20	
%urroSateg- :13 ichloroethane3d7	D8		2	B1.D		01.-	87:- 1-			
%urroSategToluene3d8	B"		2	B1.D		- 4-	8C:- - C			
%urroSateg73 romofluorobenzene	B7		2	B1.D		- 41	87:- - 7			

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### Notes and Definitions

Np Analyte NOT pPTPCTPp at or above the rej orting limit

R; p Relative ; ercent pifference

All soil results are rej orted at a Xet Xeight basis.

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; rowect[ KMG - HSR Corvi 2-36

## CROSS RPFPRPNCP RP; ORT

Samj le lp	Laboratory lp	Matrix	p ate Samj led	p ate Received
S-BH01	95121zz-01	4 ater	pecember 8, 2015 1z[12	12/08/2015 15[2:
4 -BH02	95121zz-02	4 ater	pecember 8, 2015 13[28	12/08/2015 15[2:
N-BH03	95121zz-03	4 ater	pecember 8, 2015 13[z0	12/08/2015 15[2:
N-BH0z	95121zz-0z	4 ater	pecember 8, 2015 13[50	12/08/2015 15[2:
4 -BH05	95121zz-05	4 ater	pecember 8, 2015 13[5z	12/08/2015 15[2:
N4 -BH06	95121zz-06	4 ater	pecember 8, 2015 1z[02	12/08/2015 15[2:
BH07	95121zz-07	4 ater	pecember 8, 2015 12[z1	12/08/2015 15[2:
BH08	95121zz-08	4 ater	pecember 8, 2015 12[52	12/08/2015 15[2:
BH0:	95121zz-0:	4 ater	pecember 8, 2015 12[z2	12/08/2015 15[2:
BH10	95121zz-10	4 ater	pecember 8, 2015 1z[z3	12/08/2015 15[2:

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; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

## CROSS RPFPRPNCP RP; ORT

Samj le lp

Laboratory lp

Matrix

p ate Samj led

p ate Received

BH11

95121zz-11

4 ater

p ecember 8, 2015 1z[32

12/08/2015 15[2:

Origins Laboratory, Inc.



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page 1 of 2

Robert CorneE

Project Manager/Send Report To: BOC@tasman-geo.com

Email Address: ↓ cEauvic: Phil Hamlin

Project Name/Number: HSR Corvi 2-36

Samples Collected By: Kevin W. Tyler B

Client: APC / Tasman

Address: 785-554-7588

Telephone Number: 785-554-7588

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

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 Summary & Contaminant	Other			
S-BH01	12/18/15	1412	3	X	X	X		X				X		1
W-BH02	12/18/15	1328		X	X	X		X				X		2
N-BH03		1340		X	X	X		X				X		3
N-BH04		1350		X	X	X		X				X		4
W-BH05		1354		X	X	X		X				X		5
NW-BH06		1402		X	X	X		X				X		6
BH07		1241		X	X	X		X				X		7
BH08		1252		X	X	X		X				X		8
BH09		1242		X	X	X		X				X		9
BH10	✓	1443	✓	X	X	X		X				X		10
Relinquished By: <u>Bob CorneE</u>	Date: <u>12/18/15</u>	Time: <u>1529</u>	Time: <u>1529</u>	Received By: <u>Phil Hamlin</u>	Date: <u>12/18/15</u>	Time: <u>1529</u>	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard							
Relinquished By: <u>Phil Hamlin</u>	Date: <u>12/18/15</u>	Time: <u>1529</u>	Time: <u>1529</u>	Received By: <u>Phil Hamlin</u>	Date: <u>12/18/15</u>	Time: <u>1529</u>								

Comments:

Date Results Needed:

12/1

Origins Laboratory, Inc.

*Jeff Pellegri*

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; age 5 of 26

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; rowect[ KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 1512144

Client: Tasman

Client Project ID: HSR Corvi 2-36

Checklist Completed by: Joe Henderson

Shipped Via: H/D

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

Date/time completed: 12/9/15 1344

Airbill #: 1117

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

Cooler Number/Temperature: 1 13.1 °C 1 °C 1 °C 1 °C (Describe)

Thermometer ID: TW3

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"/>		<u>Sampled Some Dry</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" 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 checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<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 checked="" type="checkbox"/>			<u>ACL</u>
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 12/14/15

Origins Laboratory, Inc.

*Joe Pellegrini*

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Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

S-BH01

12/8/201p 2:12:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-01 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

08.0 6

873 1-

"

"

2

%urroSategToluene3d8

- 4- 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

"

"

2

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; rowect[ KMG - HSR Corvi 2-36

W-BH02

12/8/201p 1:28:00PM

Analyte	Result	Rej orting Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-02 (Water)

## BTE5 by EPA 8260C

BenEene	2X60	20.0	ug/L	20	B5L1101	12/11/2015	12/11/2015
Toluene	933	20.0	W	W	W	W	W
PthylbenEene	78.8	20.0	W	W	W	W	W
9ylenes, total	928	20.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

08.0 6

873 1-

"

"

2

%urroSategToluene3d8

- 4- 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

"

"

2

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N-BH03

12/8/201p 1:X0:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-03 (Water)

## BTE5 by EPA 8260C

BenEene	p2.6	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	18.X	1.0	W	W	W	W	W
PthylbenEene	2.1	1.0	W	W	W	W	W
9ylenes, total	37.1	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7	00.8 6	873 1-			"	"	- 15 - 54- D
%urroSategToluene3d8	- 41 6	8D3 - D			"	"	2
%urroSateg73 romofluorobenzene	- 47 6	873 - 7			"	"	2

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N-BH0X

12/8/201p 1:p0:00PM

Analyte	Result	Rej orting Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-0X (Water)

## BTE5 by EPA 8260C

BenEene	176	20.0	ug/L	20	B5L1101	12/11/2015	12/12/2015
Toluene	X7X	20.0	W	W	W	W	W
PthylbenEene	280	20.0	W	W	W	W	W
9ylenes, total	3X80	20.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7	09.D6	873 1-	"	"	- 15 - 54- D
%urroSategToluene3d8	- 44 6	8D3 - D	"	"	2
%urroSateg73 romofluorobenzene	- 4" 6	873 - 7	"	"	2

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W-BH0b

12/8/201p 1:pX:00PM

Analyte	Result	Rej orting Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-0p (Water)

## BTE5 by EPA 8260C

BenEene	28.p	2.0	ug/L	2	B5L1101	12/11/2015	12/11/2015
Toluene	Np	2.0	W	W	W	W	W
PthylbenEene	38.8	2.0	W	W	W	W	W
9ylenes, total	127	2.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

08.9 6

873 1-

"

"

2

%urroSategToluene3d8

- 41 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

"

"

2

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NW-BH06

12/8/201p 2:02:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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5p121XX-06 (Water)

## BTE5 by EPA 8260C

BenEene	12200	200	ug/L	200	B5L1101	12/11/2015	12/11/2015
Toluene	11100	200	W	W	W	W	W
PthylbenEene	p98	200	W	W	W	W	W
9ylenes, total	10200	200	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

00.- 6

873 1-

"

"

2

%urroSategToluene3d8

- 4- 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 44 6

873 - 7

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BH07

12/8/201p 12:X1:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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5p121XX-07 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

- 4" 6

873 1-

"

"

2

%urroSategToluene3d8

00.7 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 41 6

873 - 7

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2

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BH08

12/8/201p 12:p2:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-08 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

08.B 6

873 1-

"

"

2

%urroSategToluene3d8

- 4- 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

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BH09

12/8/201p 12:X2:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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5p121XX-09 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

00.D6

873 1-

"

"

2

%urroSategToluene3d8

00.8 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

"

"

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BH10

12/8/201p 2:X3:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-10 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

- 4- 6

873 1-

"

"

2

%urroSategToluene3d8

00.B 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 4- 6

873 - 7

"

"

2

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BH11

12/8/201p 2:32:00PM

Analyte	Result	Limit	Units	p ilution	Batch	; rej ared	AnalyEed	Notes
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Origins Laboratory, Inc.

5p121XX-11 (Water)

## BTE5 by EPA 8260C

BenEene	Np	1.0	ug/L	1	B5L1101	12/11/2015	12/11/2015
Toluene	Np	1.0	W	W	W	W	W
PthylbenEene	Np	1.0	W	W	W	W	W
9ylenes, total	Np	1.0	W	W	W	W	W

%urroSateg- :13 ichloroethane3d7

0B0 6

873 1-

"

"

2

%urroSategToluene3d8

- 4- 6

8D3 - D

"

"

2

%urroSateg73 romofluorobenzene

- 41 6

873 - 7

"

"

2

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
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Batch BpL1101 - EPA p030B (Water)

**Blank (BpL1101-BLK1)**

; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015

BenEene	Np	1.0	ug/L							
Toluene	Np	1.0	W							
PthylbenEene	Np	1.0	W							
9ylenes, total	Np	1.0	W							
%urroSateg- :13 ichloroethane3d7	B1		2	B1.D		08.9	87%- 1-			
%urroSategToluene3d8	B7		2	B1.D		- 41	8C%- - C			
%urroSateg73' romofluorobenzene	B"		2	B1.D		- 4-	87%- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
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Batch BpL1101 - EPA p030B (Water)

**Blank (BpL1101-BLK2)**

; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015

BenEene	Np	1.0	ug/L							
Toluene	Np	1.0	W							
PthylbenEene	Np	1.0	W							
9ylenes, total	Np	1.0	W							
%urroSateg- :13 ichloroethane3d7	B1		2	B1.D		00.4	87%- 1-			
%urroSategToluene3d8	B7		2	B1.D		- 41	8C%- - C			
%urroSateg73 romofluorobenzene	B1		2	B1.D		00.1	87%- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
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Batch BpL1101 - EPA p030B (Water)

LCS (BpL1101-BS1)

; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015

BenEene	5z.z	1.0	ug/L	50.0	10:	73.3-12:
Toluene	53.3	1.0	W	50.0	107	76.2-123
PthylbenEene	55.z	1.0	W	50.0	111	73.6-130
m.j -9ylene	110	2.0	W	100	110	76.1-126
o-9ylene	5z.2	1.0	W	50.0	108	76.6-12z
%urroSateg- :13 ichloroethane3d7	D8		2	B1.D	0".B	87:- 1-
%urroSategToluene3d8	B7		2	B1.D	- 41	8C:- - C
%urroSateg73 romofluorobenzene	BC		2	B1.D	- 47	87:- - 7

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
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Batch BpL1101 - EPA p030B (Water)

LCS (BpL1101-BS2)

; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015

BenEene	z6.6	1.0	ug/L	50.0		: 3.2	73.3-12:			
Toluene	zz.8	1.0	W	50.0		8: .6	76.2-123			
PthylbenEene	z5.5	1.0	W	50.0		: 1.0	73.6-130			
m.j -9ylene	: 0.3	2.0	W	100		: 0.3	76.1-126			
o-9ylene	z6.2	1.0	W	50.0		: 2.z	76.6-12z			
%urroSateg- :13 ichloroethane3d7	D0		2	B1.D		07.1	87:- 1-			
%urroSategToluene3d8	B"		2	B1.D		- 4-	8C:- - C			
%urroSateg73 romofluorobenzene	B7		2	B1.D		- 41	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
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Batch BpL1101 - EPA p030B (Water)

Matrix SI ike (BpL1101-MS1)		Source: 5p12136-02		; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015						
BenEene	z5.z	1.0	ug/L	50.0	Np	: 0.7	7z-130			
Toluene	z3.z	1.0	W	50.0	Np	86.8	73-131			
PthylbenEene	zz.2	1.0	W	50.0	Np	88.z	76-132			
m.j -9ylene	88.0	2.0	W	100	Np	88.0	6: -13:			
o-9ylene	z5.8	1.0	W	50.0	Np	: 1.5	7z-131			
%urroSateg- :13 ichloroethane3d7	D8		2	B1.D		01.B	87:- 1-			
%urroSategToluene3d8	B"		2	B1.D		- 4-	8C:- - C			
%urroSateg73 romofluorobenzene	B7		2	B1.D		- 41	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
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Batch BpL1101 - EPA p030B (Water)

Matrix SI ike (BpL1101-MS2)		Source: 5p12136-03		; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015						
BenEene	z6.7	1.0	ug/L	50.0	Np	: 3.z	7z-130			
Toluene	z5.7	1.0	W	50.0	Np	: 1.z	73-131			
PthylbenEene	z5.:	1.0	W	50.0	Np	: 1.8	76-132			
m.j -9ylene	: 1.7	2.0	W	100	Np	: 1.7	6: -13:			
o-9ylene	z8.1	1.0	W	50.0	Np	: 6.2	7z-131			
%urroSateg- :13 ichloroethane3d7	D9		2	B1.D		0- .4	87:- 1-			
%urroSategToluene3d8	B7		2	B1.D		- 4"	8C:- - C			
%urroSateg73 romofluorobenzene	B1		2	B1.D		08.9	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
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Batch BpL1101 - EPA p030B (Water)

Matrix SI ike Dul (BpL1101-MSD1)		Source: 5p12136-02		; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015						
BenEene	z5.:	1.0	ug/L	50.0	Np	: 1.:	7z-130	1.23	20	
Toluene	zz.6	1.0	W	50.0	Np	8: .1	73-131	2.66	20	
PthylbenEene	z5.1	1.0	W	50.0	Np	: 0.2	76-132	2.02	20	
m.j -9ylene	8: .6	2.0	W	100	Np	8: .6	6: -13:	1.8z	20	
o-9ylene	z6.8	1.0	W	50.0	Np	: 3.7	7z-131	2.33	20	
%urroSateg- :13 ichloroethane3d7	DB		2	B1.D		04.7	87:- 1-			
%urroSategToluene3d8	B"		2	B1.D		- 4-	8E:- - E			
%urroSateg73 romofluorobenzene	B1		2	B1.D		00.9	87:- - 7			

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## 4oVatiVe Organic Coml ounds by GC/MS SW8X6 8260C - QuaVty ControV

### Origins Laboratory, Inc.

Analyte	Result	Rej orting Limit	Units	Sj ike Level	Source Result	%RPC	%RPC Limits	R; p	R; p Limit	Notes
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Batch BpL1101 - EPA p030B (Water)

Matrix SI ike Dul (BpL1101-MSD2)		Source: 5p12136-03		; rej ared[ 12/11/2015 AnalyEed[ 12/11/2015						
BenEene	z6.6	1.0	ug/L	50.0	Np	: 3.3	7z-130	0.12:	20	
Toluene	zz.2	1.0	W	50.0	Np	88.5	73-131	3.25	20	
PthylbenEene	zz.8	1.0	W	50.0	Np	8: .6	76-132	2.38	20	
m.j -9ylene	8: .:	2.0	W	100	Np	8: .:	6: -13:	2.02	20	
o-9ylene	z6.3	1.0	W	50.0	Np	: 2.7	7z-131	3.73	20	
%urroSateg- :13 ichloroethane3d7	D8		2	B1.D		01.-	87:- 1-			
%urroSategToluene3d8	B"		2	B1.D		- 4-	8C:- - C			
%urroSateg73 romofluorobenzene	B7		2	B1.D		- 41	87:- - 7			

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.

Tasman Geosciences

68: : ; ecos Street, Unit C

penver CO 80211

Bob CorneE

; rowect Number[ ]noneD

; rowect[ KMG - HSR Corvi 2-36

### Notes and Definitions

Np Analyte NOT pPTPCTPp at or above the rej orting limit

R; p Relative ; ercent pifference

All soil results are rej orted at a Xet Xeight 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.*



**Marcp 22, 2016**

**Tasman Geosciences**

**Bob Cornez**

**6899 Pecos Street, Unit C**

**Denver**

**CO 80211**

**Project Name - KMG - HSR Corvi 2-36**

**Project Number - [none]**

Attached are your analytical results for KMG - HSR Corvi 2-36 received by Origins Laboratory, Inc. March 16, 2016. This project is associated with Origins project number X603216-01.

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**

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01-03/16/16	X603216-01	Water	March 16, 2016 11:18	03/16/2016 16:30
BH02-03/16/16	X603216-02	Water	March 16, 2016 11:58	03/16/2016 16:30
BH03-03/16/16	X603216-03	Water	March 16, 2016 11:47	03/16/2016 16:30
BH04-03/16/16	X603216-04	Water	March 16, 2016 11:35	03/16/2016 16:30
BH05-03/16/16	X603216-05	Water	March 16, 2016 11:44	03/16/2016 16:30
BH06-03/16/16	X603216-06	Water	March 16, 2016 12:05	03/16/2016 16:30
BH07-03/16/16	X603216-07	Water	March 16, 2016 12:19	03/16/2016 16:30
BH08-03/16/16	X603216-08	Water	March 16, 2016 12:36	03/16/2016 16:30
BH09-03/16/16	X603216-09	Water	March 16, 2016 11:33	03/16/2016 16:30
BH10-03/16/16	X603216-10	Water	March 16, 2016 11:20	03/16/2016 16:30

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - HSR Corvi 2-36

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH11-03/16/16	X603216-11	Water	March 16, 2016 11:34	03/16/2016 16:30

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.*

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

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page 1 of 2

**X603216**

Client: Tasman Geo for APC  
Project Manager: Bob Cornez  
Project Name: HSR Corvi 2-36  
Project Number:  
Samples Collected By: Brock Nelson  
Telephone Number: 912 230 2807  
Email Address: fcornez@tasman-geo.com APC Invoice Phil Hamlin

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #		
BH02L - 03/10/16	3/16/16	1118	3									1
BH02 - 03/10/16		1158	3									2
BH03 - 03/10/16		1147	3									3
BH04 - 03/10/16		1135	3									4
BH05 - 03/10/16		1144	3									5
BH06 - 03/10/16		1205	3									6
BH07 - 03/10/16		1219	3									7
BH08 - 03/10/16		1236	3									8
BH09 - 03/10/16		1133	3									9
BH10 - 03/10/16		1120	3									10
Relinquished By: [Signature]	Date: 3/16/16	Time: 1630		Received By: [Signature]				Date: 3.16.16			Time: 1630	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 4.1
Relinquished By:	Date:	Time:		Received By:				Date:			Time:	

Date Results Needed

Temp Received

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**ORIGINS** LABORATORY, INC

Client: Tasman Geo for APC

Address: \_\_\_\_\_

Telephone Number: 912 230 2807

Email Address: corv2@tasman-geo.com

www.originslaboratory.com

page 2 of 2

X603216

Project Manager: Bob Cornez

Project Name: HSR Corvi 2-36

Project Number: \_\_\_\_\_

Samples Collected By: Brake Nelson

APC Invoice: Phil Hamlin

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Continer #		
BH41-03/10/16	3/16/16	1134	3	X				X			ISTEX	1
												2
												3
												4
												5
												6
												7
												8
												9
												10

Relinquished By: [Signature] Date: 3/16/16 Time: 1630

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received By: Kap Date: 3.16.16 Time: 1630

Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☒ Standard 4.1

Temp Received: \_\_\_\_\_

Date Results Needed: \_\_\_\_\_

Origins Laboratory, Inc.

*Jefe Pellegrini*

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XG03216

Client: Tasman

Client Project ID: HSR Corvi 2-36

Checklist Completed by: Jeff Smith

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

Date/time completed: 3/12/12

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.1 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °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 ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" 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 checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<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 checked="" type="checkbox"/>			<u>HCL</u>
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) [Signature]

Date/Time Reviewed 3/12/12

Origins Laboratory, Inc.

Jeff Pellegrini

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH01-03.16.16

3.16.2016 11/18/00: M

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-01 X aterv

## BTE5 bL EP: 8260C

Benzene	ND	1.0	ug/L	1	B6C1703	03/17/2016	03/18/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

103 % 84-121  
106 % 85-115  
94.0 % 84-114

" " "  
" " "  
" " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH02-03.16.16

3.16.2016 11/A8/00: M

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-02 X aterv

## BTE5 bL EP: 8260C

Benzene	2A60	20.0	ug/L	20	B6C1703	03/17/2016	03/18/2016
Toluene	712	20.0	"	"	"	"	"
Ethylbenzene	7214	20.0	"	"	"	"	"
Xylenes, total	92A	20.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

106 % 84-121  
104 % 85-115  
100 % 84-114

" " "  
" " "  
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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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH03-03.16.16

3.16.2016 11/47/00: M

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-03 X aterv

## BTE5 bL EP: 8260C

Benzene	9IA	4.0	ug/L	4	B6C1703	03/17/2016	03/18/2016	
Toluene	7I2	4.0	"	"	"	"	"	
Ethylbenzene	ND	4.0	"	"	"	"	"	U
Xylenes, total	8I9	4.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	84-121			"	"	"
Surrogate: Toluene-d8	105 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	98.8 %	84-114			"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH04-03.16.16

3.16.2016 11/3A/00: M

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-04 X aterv

## BTE5 bL EP: 8260C

Benzene	172	50.0	ug/L	50	B6C1703	03/17/2016	03/18/2016
Toluene	316	50.0	"	"	"	"	"
Ethylbenzene	196	50.0	"	"	"	"	"
Xylenes, total	2320	50.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

107 % 84-121  
104 % 85-115  
101 % 84-114

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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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH0A-03.16.16

3.16.2016 11/44/00: M

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-0AX aterv

## BTE5 bL EP: 8260C

Benzene	A9	1.0	ug/L	1	B6C1703	03/17/2016	03/18/2016	
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	9I2	1.0	"	"	"	"	"	
Xylenes, total	29I3	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	107 %	84-121			"	"	"	
Surrogate: Toluene-d8	106 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.9 %	84-114			"	"	"	

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH06-03.16.16

3.16.2016 12/0A/00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-06 X aterv

## BTE5 bL EP: 8260C

Benzene	11800	100	ug/L	100	B6C1703	03/17/2016	03/19/2016
Toluene	6810	50.0	"	50	"	"	03/18/2016
Ethylbenzene	732	50.0	"	"	"	"	"
Xylenes, total	12100	50.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

105 % 84-121  
104 % 85-115  
102 % 84-114

" "  
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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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH07-03.16.16

3.16.2016 12/19/00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-07 X aterv

## BTE5 bL EP: 8260C

Benzene	ND	1.0	ug/L	1	B6C1703	03/17/2016	03/18/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

106 % 84-121  
103 % 85-115  
97.4 % 84-114

" " "  
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" " "

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH08-03.16.16

3.16.2016 12/36/00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-08 X aterv

## BTE5 bL EP: 8260C

Benzene	ND	1.0	ug/L	1	B6C1703	03/17/2016	03/18/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

111 % 84-121  
106 % 85-115  
97.3 % 84-114

" " "  
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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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH09-03.16.16

3.16.2016 11/33/00: M

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-09 X aterv

## BTE5 bL EP: 8260C

Benzene	ND	1.0	ug/L	1	B6C1703	03/17/2016	03/18/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

105 % 84-121  
104 % 85-115  
96.5 % 84-114

" " "  
" " "  
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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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH10-03.16.16

3.16.2016 11/20/00: M

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-10 X aterv

## BTE5 bL EP: 8260C

Benzene	ND	1.0	ug/L	1	B6C1703	03/17/2016	03/18/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

105 % 84-121  
102 % 85-115  
99.9 % 84-114

" " "  
" " "  
" " "

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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

BH11-03.16.16

3.16.2016 11/34/00: M

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Ori) ins gaboratorL, ynci  
5603216-11 X aterv

## BTE5 bL EP: 8260C

Benzene	ND	1.0	ug/L	1	B6C1703	03/17/2016	03/18/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

104 % 84-121  
101 % 85-115  
98.6 % 84-114

" " "  
" " "  
" " "

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS (846 8260C - h ualitL Control)**  
**Origins Laboratory, Inc.**

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

**Batcp B6C1703 - EP: A030B X aterW**

**Blank B6C1703-BgK1W**

Prepared: 03/17/2016 Analyzed: 03/18/2016

Benzene	ND	1.0	ug/L							U
Toluene	ND	1.0	"							U
Ethylbenzene	ND	1.0	"							U
Xylenes, total	ND	1.0	"							U
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5	102		84-121			
Surrogate: Toluene-d8	64		"	62.5	102		85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5	97.8		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS (846 8260C - High Quality Control)**  
**Origins Laboratory, Inc.**

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

**Batcp B6C1703 - EP: A030B X aterW**

**gCS B6C1703-BS1W**

Prepared: 03/17/2016 Analyzed: 03/18/2016

Benzene	54.9	1.0	ug/L	50.0		110	73.3-129			
Toluene	57.1	1.0	"	50.0		114	76.2-123			
Ethylbenzene	59.6	1.0	"	50.0		119	73.6-130			
m,p-Xylene	119	2.0	"	100		119	76.1-126			
o-Xylene	55.4	1.0	"	50.0		111	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.6	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS (846 8260C - hualitL Control)**  
**Origins Laboratory, Inc.**

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

Batcp B6C1703 - EP: A030B X aterW

Matrix Spike B6C1703-MS1W		Source/ 5603206-02			Prepared: 03/17/2016 Analyzed: 03/18/2016					
Benzene	37.3	1.0	ug/L	50.0	ND	74.7	74-130			
Toluene	38.8	1.0	"	50.0	ND	77.5	73-131			
Ethylbenzene	38.4	1.0	"	50.0	ND	76.9	76-132			
m,p-Xylene	78.6	2.0	"	100	ND	78.6	69-139			
o-Xylene	37.3	1.0	"	50.0	ND	74.5	74-131			
Surrogate: 1,2-Dichloroethane-d4	69		"	62.5		110	84-121			
Surrogate: Toluene-d8	66		"	62.5		105	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.0	84-114			

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - HSR Corvi 2-36

**Volatile Organic Compounds by GC/MS (846 8260C - h ualitL Control  
Ori) ins gaboratorL, ynci**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batcp B6C1703 - EP: A030B X aterW</b>										
<b>Matrix Spike Duplicate B6C1703-MSD1W</b>										
		<b>Source/ 5603206-02</b>								
Benzene	45.5	1.0	ug/L	50.0	ND	91.0	74-130	19.7	20	
Toluene	46.8	1.0	"	50.0	ND	93.6	73-131	18.8	20	
Ethylbenzene	48.5	1.0	"	50.0	ND	97.1	76-132	23.2	20	QR-03
m,p-Xylene	97.7	2.0	"	100	ND	97.7	69-139	21.7	20	QR-03
o-Xylene	47.7	1.0	"	50.0	ND	95.4	74-131	24.5	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	84-121			
Surrogate: Toluene-d8	65		"	62.5		104	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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.

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - HSR Corvi 2-36

### Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

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.*



**ATTACHMENT B  
WELL COMPLETION  
LOGS**



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Brock Nelson

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 3/5/2015-3/5/2015

TOTAL WELL DEPTH (FT. BGS): 32

DEPTH TO WATER (FT. BGS): 15.60 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH01

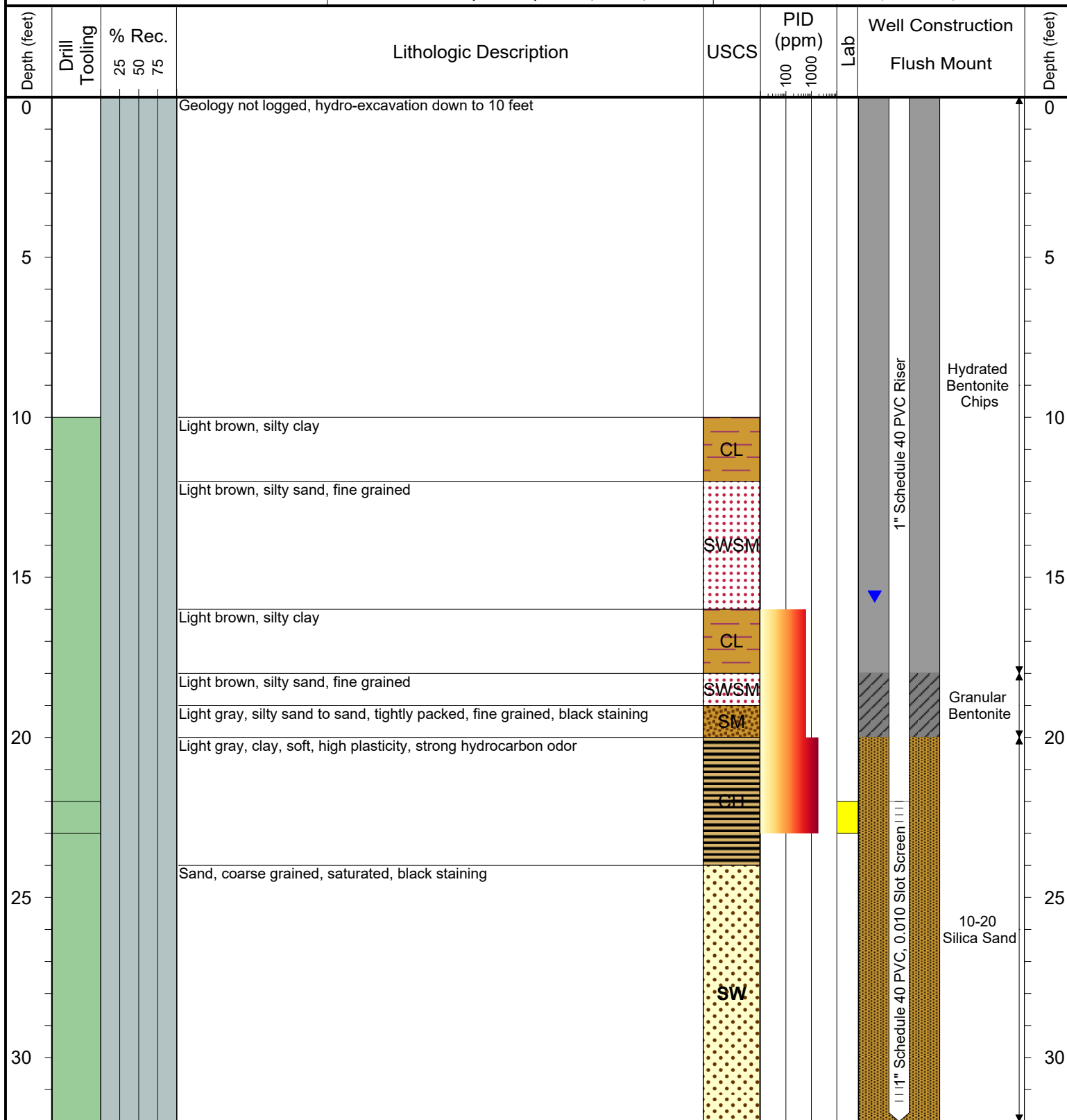
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.26864176586

EASTING (CO STATE PLANE): -104.72301426673

CASING ELEVATION (FT. AMSL): 4847.195

GROUND ELEVATION (FT. AMSL): 4847.365



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Brock Nelson

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 3/5/2015-3/5/2015

TOTAL WELL DEPTH (FT. BGS): 26

DEPTH TO WATER (FT. BGS): 14.03 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH02

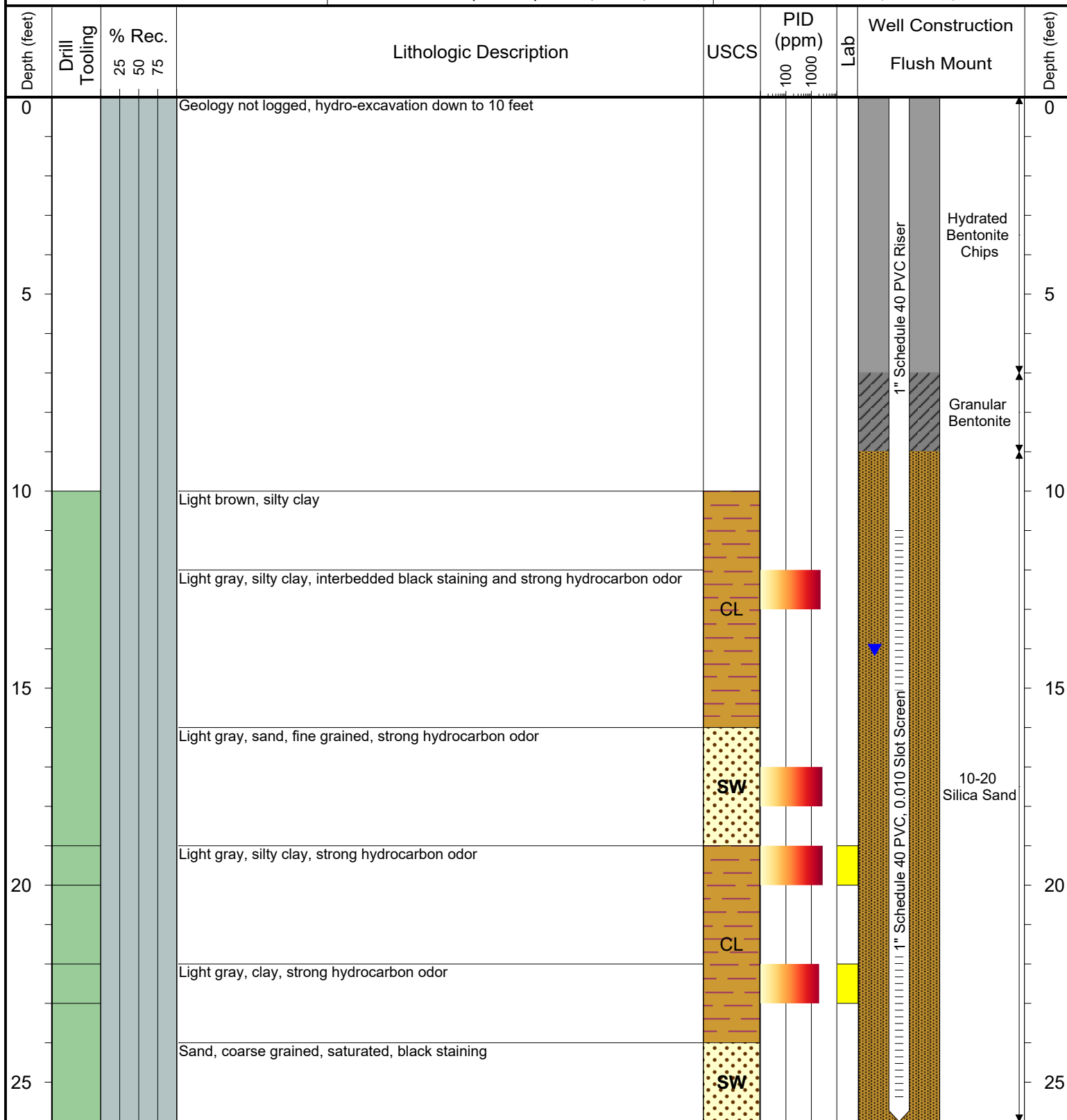
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.268817687812

EASTING (CO STATE PLANE): -104.72316234751

CASING ELEVATION (FT. AMSL): 4844.735

GROUND ELEVATION (FT. AMSL): 4844.855



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Brock Nelson

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 3/5/2015-3/5/2015

TOTAL WELL DEPTH (FT. BGS): 26

DEPTH TO WATER (FT. BGS): 12.29 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH03

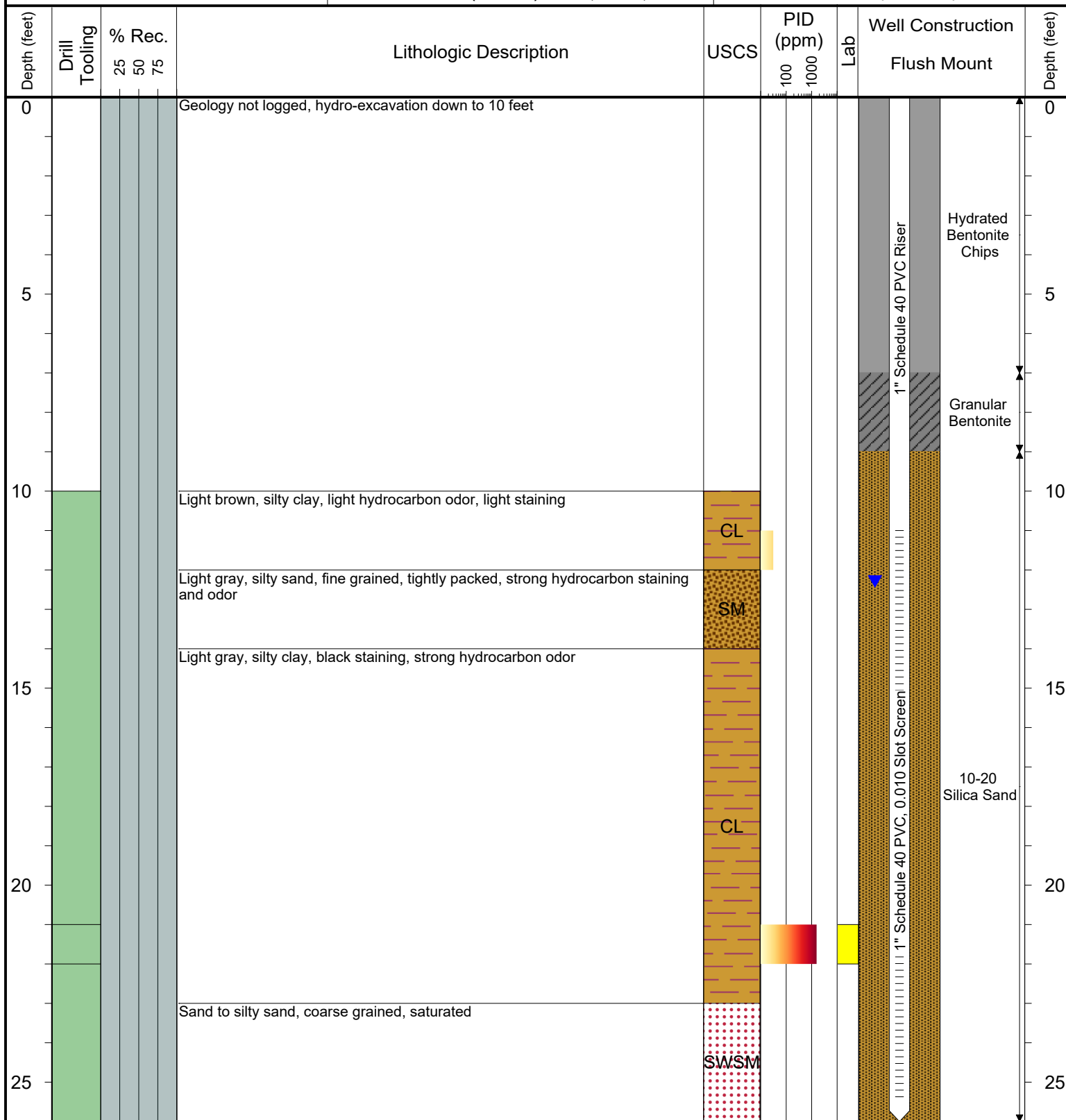
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.268861096693

EASTING (CO STATE PLANE): -104.72301616374

CASING ELEVATION (FT. AMSL): 4843.305

GROUND ELEVATION (FT. AMSL): 4843.515



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Brock Nelson

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 3/5/2015-3/5/2015

TOTAL WELL DEPTH (FT. BGS): 22

DEPTH TO WATER (FT. BGS): 11.30 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH04

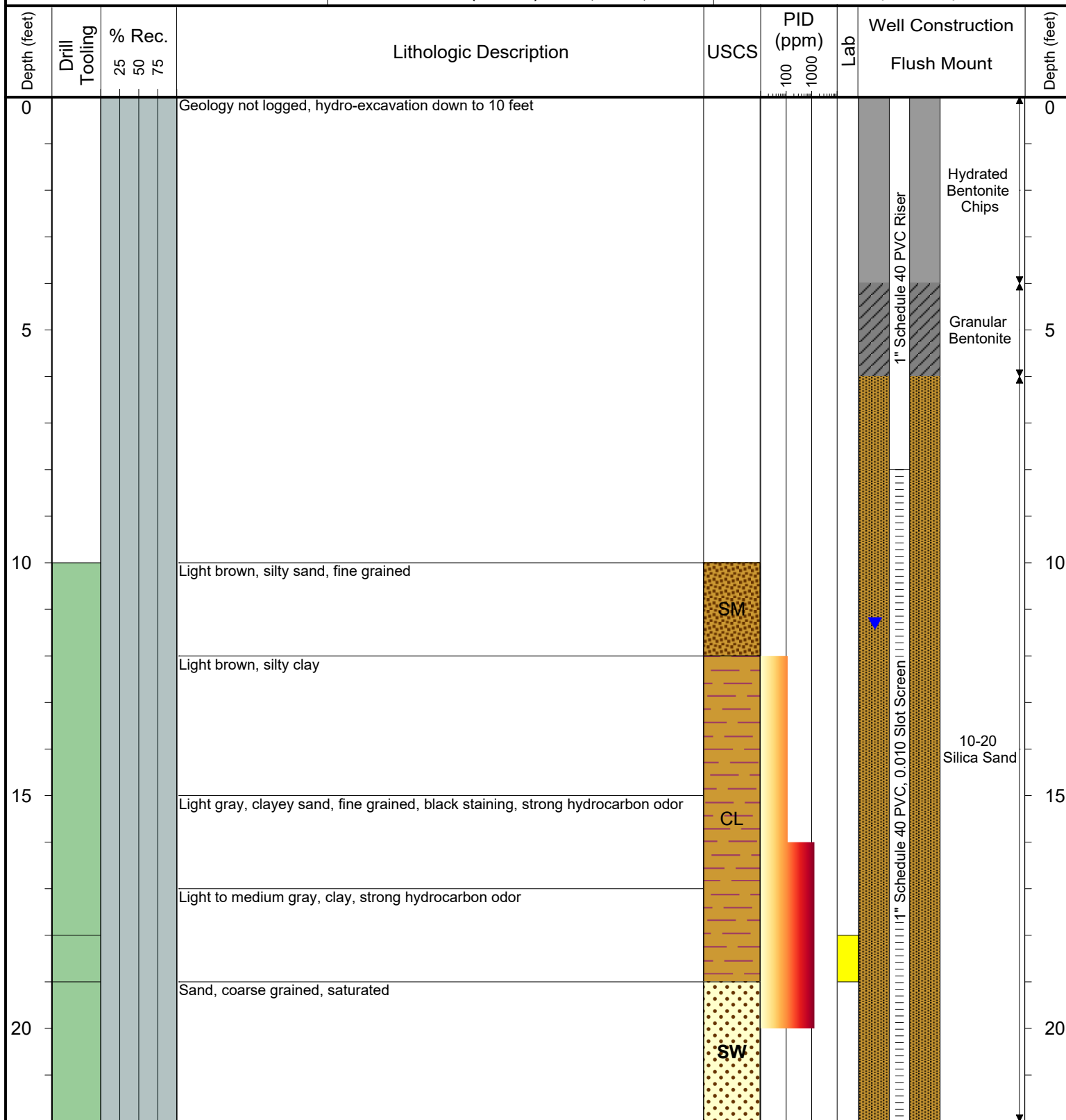
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.268997026369

EASTING (CO STATE PLANE): -104.72303570592

CASING ELEVATION (FT. AMSL): 4842.055

GROUND ELEVATION (FT. AMSL): 4842.345



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Brock Nelson

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 3/10/2015-3/10/2015

TOTAL WELL DEPTH (FT. BGS): 24

DEPTH TO WATER (FT. BGS): 14.62 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH05

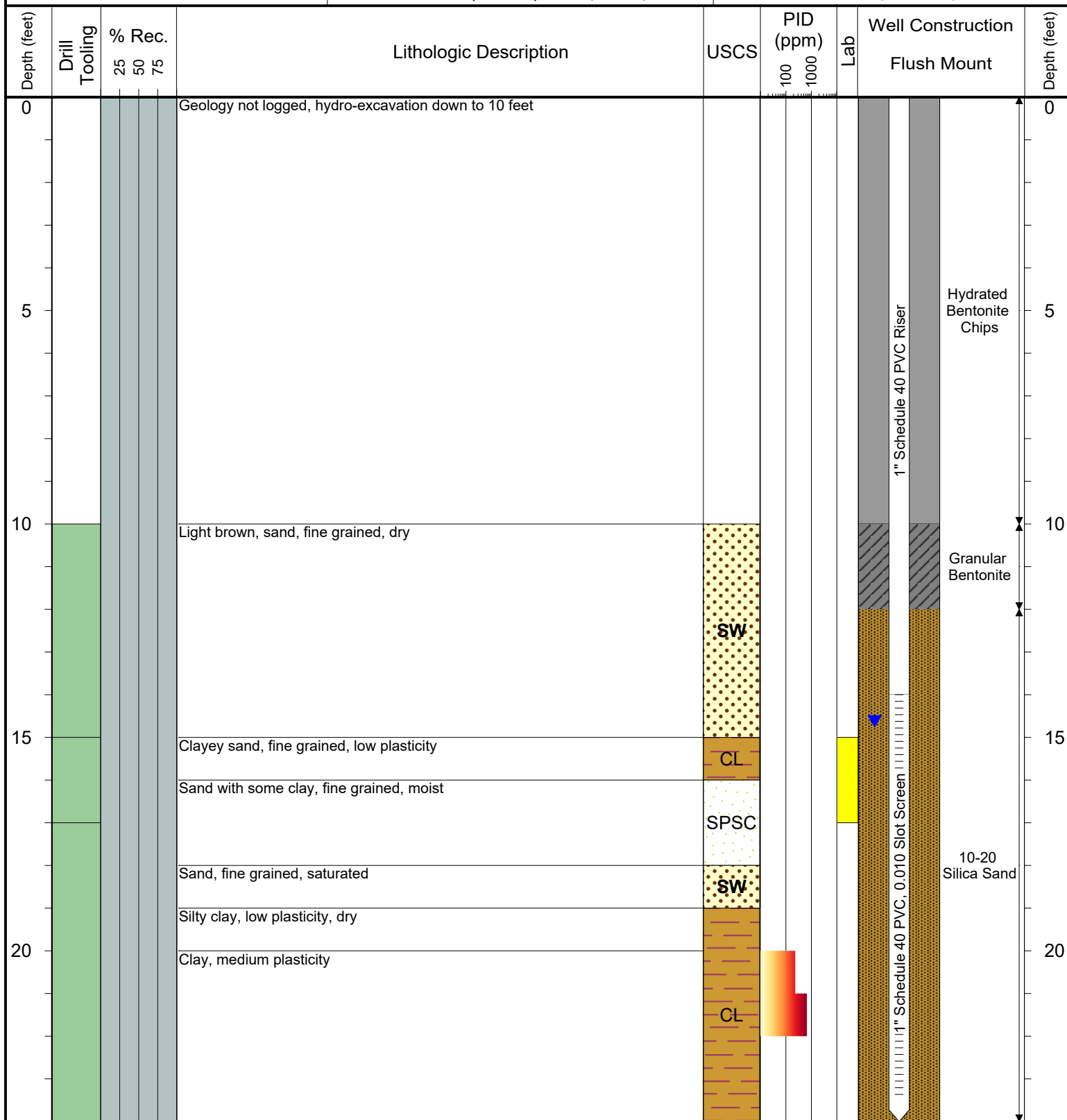
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.268800693338

EASTING (CO STATE PLANE): -104.72324127068

CASING ELEVATION (FT. AMSL): 4845.135

GROUND ELEVATION (FT. AMSL): 4845.215



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Brock Nelson

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 3/10/2015-3/106/2015

TOTAL WELL DEPTH (FT. BGS): 23

DEPTH TO WATER (FT. BGS): 12.47 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH06

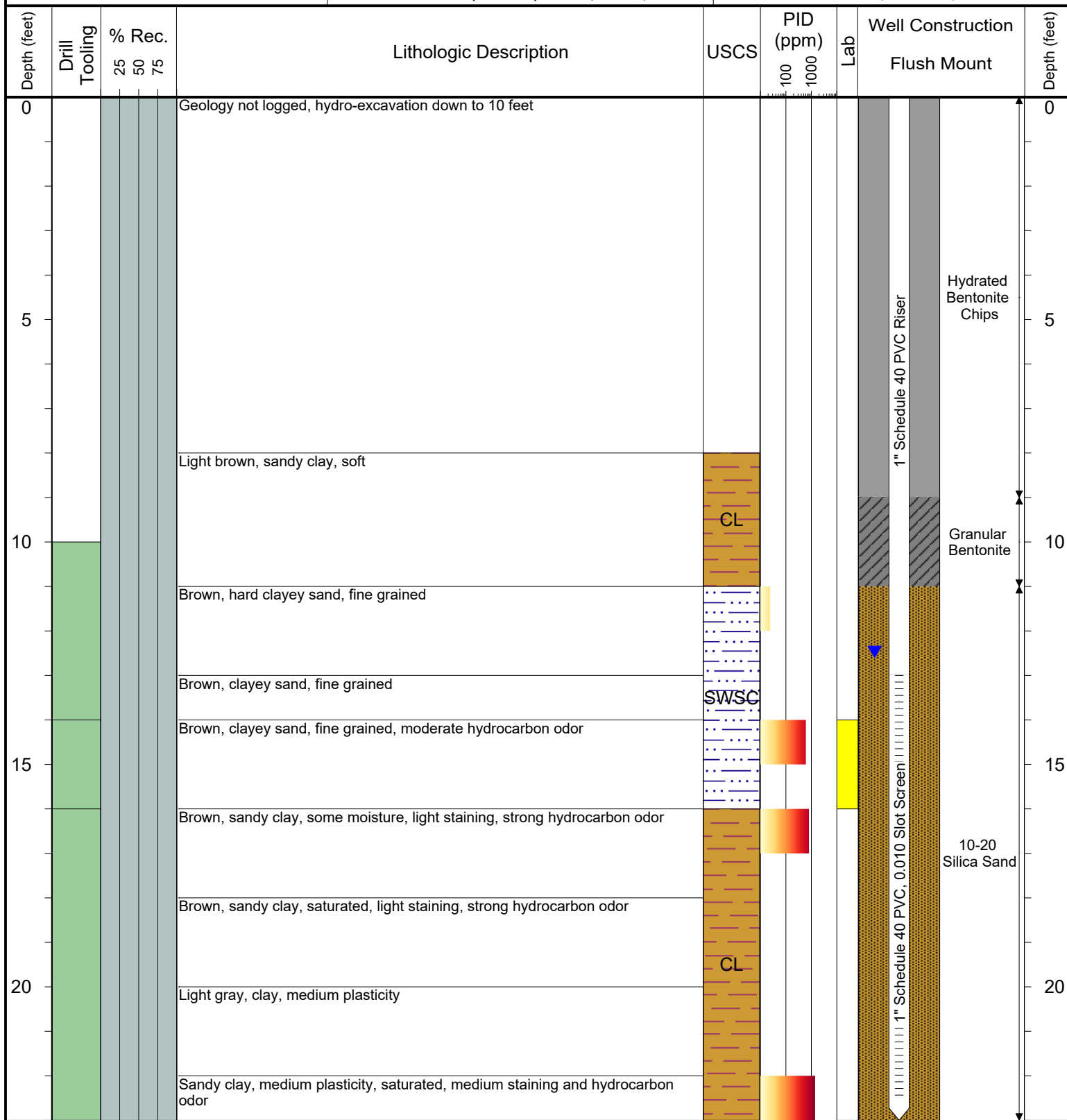
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.268906506388

EASTING (CO STATE PLANE): -104.72319408929

CASING ELEVATION (FT. AMSL): 4842.915

GROUND ELEVATION (FT. AMSL): 4843.295



**Drilling / Sample Method:**

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

**Laboratory Sample Types:**

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab





6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Kevin Walters

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 8/17/2015-8/17/2015

TOTAL WELL DEPTH (FT. BGS): 30

DEPTH TO WATER (FT. BGS): 11.59 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH07

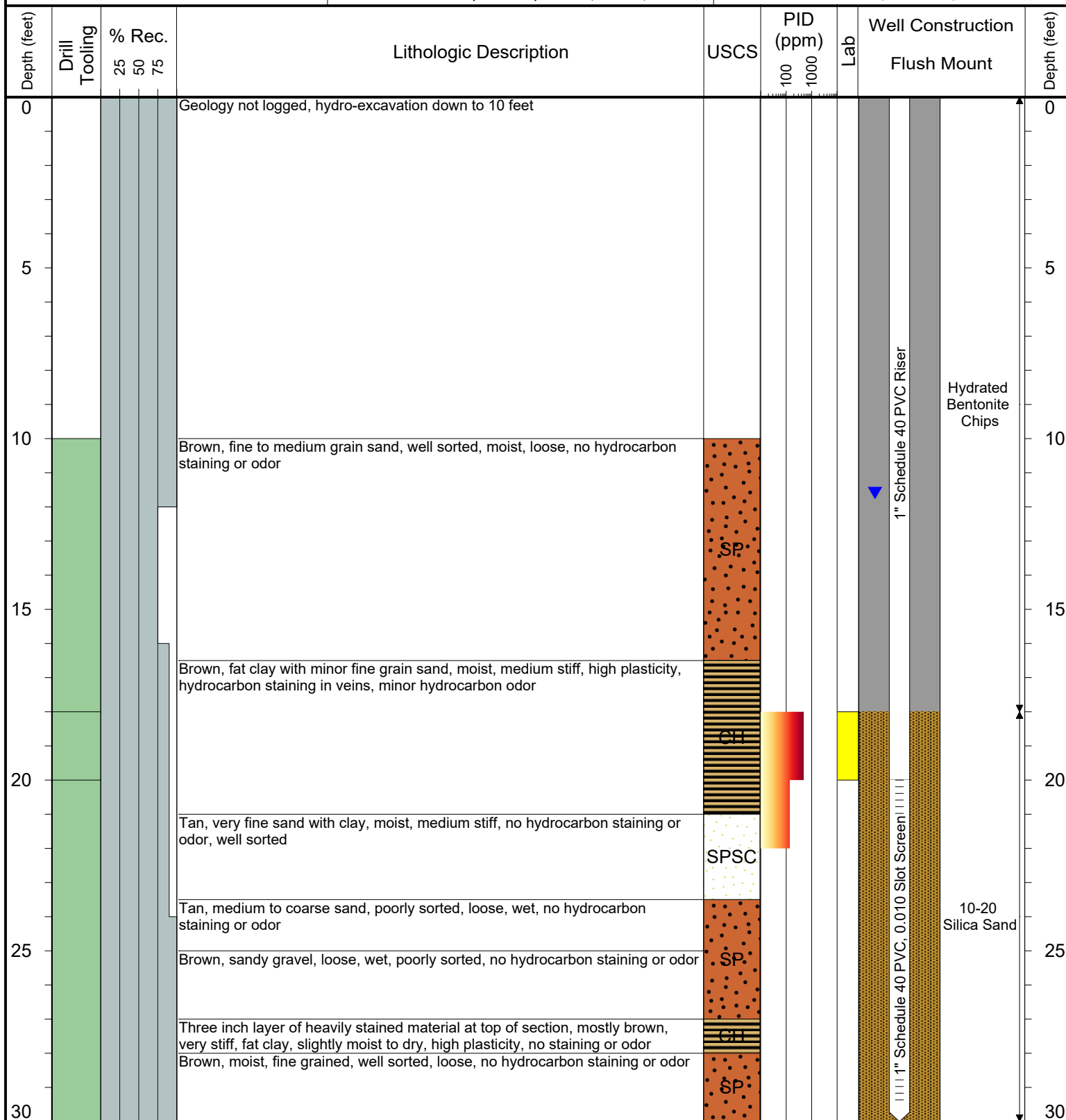
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.269141477028

EASTING (CO STATE PLANE): -104.72316038658

CASING ELEVATION (FT. AMSL): 4840.745

GROUND ELEVATION (FT. AMSL): 4842.455



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Kevin Walters

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 8/17/2015-8/17/2015

TOTAL WELL DEPTH (FT. BGS): 30

DEPTH TO WATER (FT. BGS): 11.54 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH08

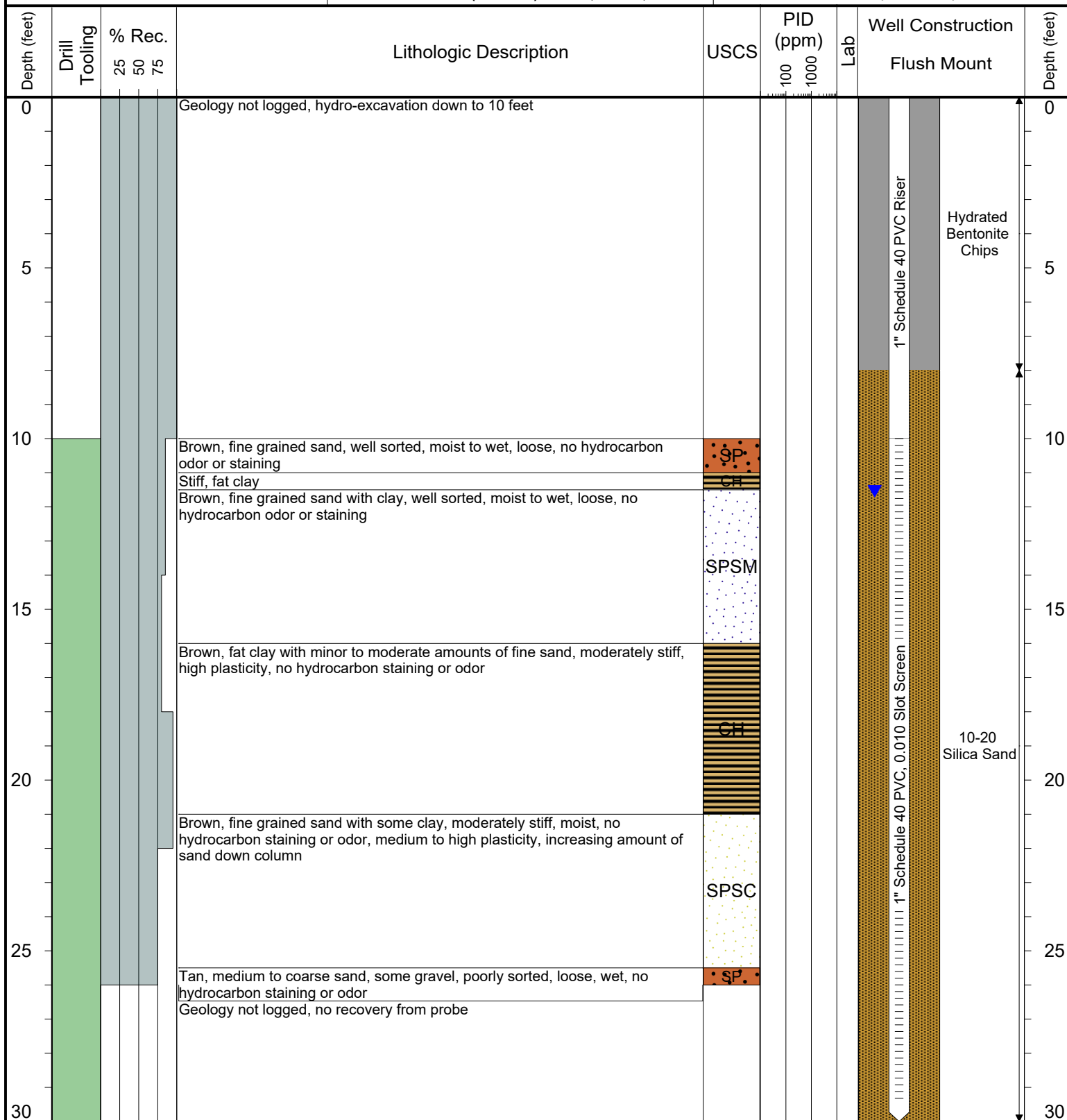
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.269117064789

EASTING (CO STATE PLANE): -104.723613402

CASING ELEVATION (FT. AMSL): 4840.495

GROUND ELEVATION (FT. AMSL): 4840.765



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Kevin Walters

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 8/17/2015-8/17/2015

TOTAL WELL DEPTH (FT. BGS): 28

DEPTH TO WATER (FT. BGS): 13.40 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH09

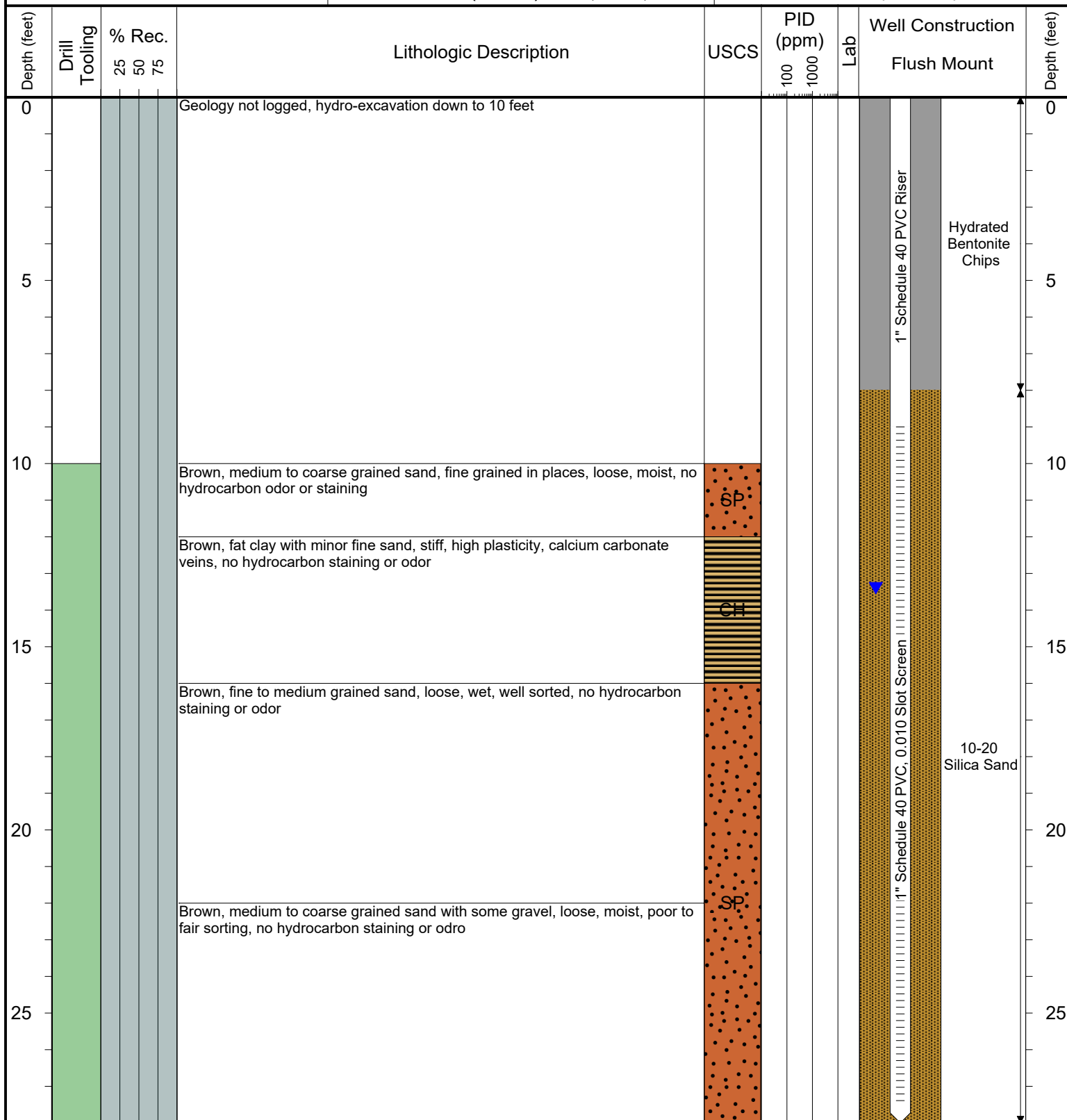
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.268850121141

EASTING (CO STATE PLANE): -104.72346865335

CASING ELEVATION (FT. AMSL): 4843.565

GROUND ELEVATION (FT. AMSL): 4843.605



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Kevin Walters

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 8/25/2015-8/25/2015

TOTAL WELL DEPTH (FT. BGS): 30

DEPTH TO WATER (FT. BGS): 13.37 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH10

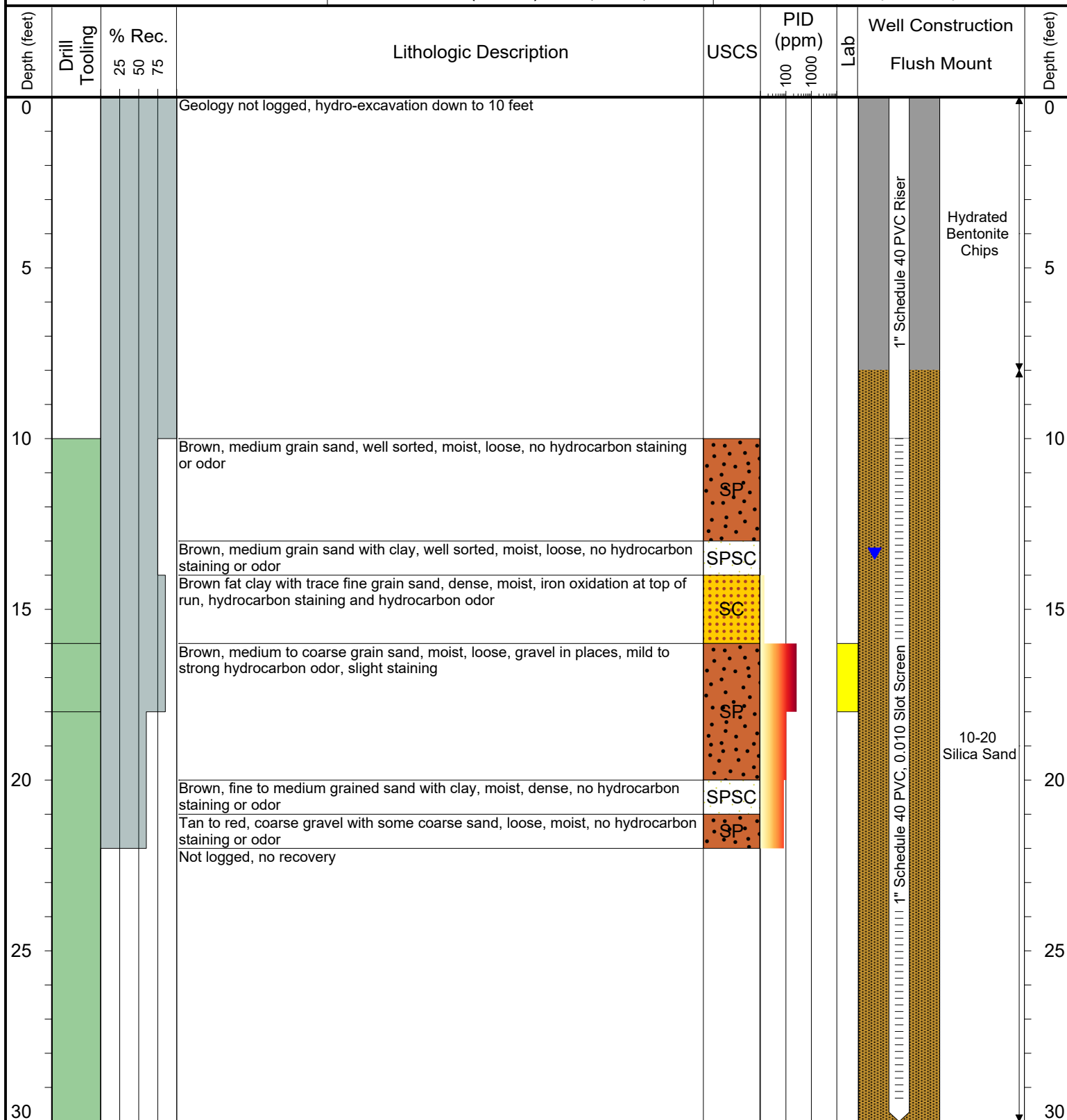
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.268811807887

EASTING (CO STATE PLANE): -104.72292141975

CASING ELEVATION (FT. AMSL): 4844.615

GROUND ELEVATION (FT. AMSL): 4845.015



Drilling / Sample Method:

- Macro-Core
- Perforated Injection Tool
- Expendable Well Tip
- HydroPunch Groundwater Sampler

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Kerr-McGee Oil and Gas Onshore, LP

LOGGED BY: Kevin Walters

PROJECT MANAGER: Bob Cornez

DRILLING CONTRACTOR: Tasman Geosciences, LLC

DRILLING EQUIPMENT: AMS Powerprobe 9300-SK

DRILL BIT SIZE (INCHES): 2.75"

DATE STARTED - COMPLETED: 8/25/2015-8/25/2015

TOTAL WELL DEPTH (FT. BGS): 29

DEPTH TO WATER (FT. BGS): 12.58 (3/16/16) ▼

HSR Corvi 64N66W36NWNE

BORING / WELL ID: BH11

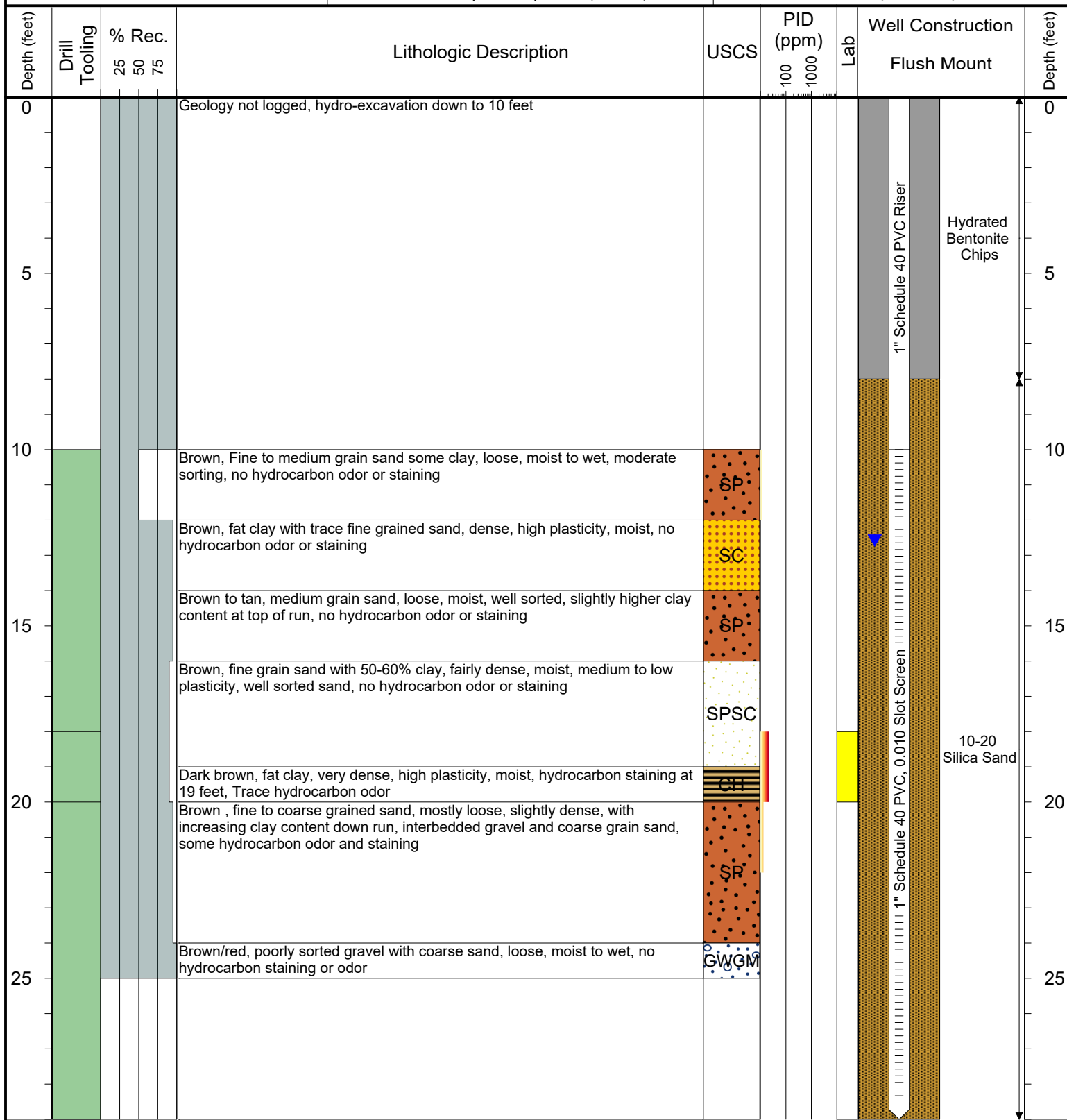
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.269010707596

EASTING (CO STATE PLANE): -104.72340153944

CASING ELEVATION (FT. AMSL): 4842.175

GROUND ELEVATION (FT. AMSL): 4842.315



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab