

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-144  
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.  
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or

13999 Proposed Alternative Method Permit or Closure Plan Application

OIL CONS. DIV DIST. 3

- Type of action: ☐ Below grade tank registration  
☐ Permit of a pit or proposed alternative method  
☐ Closure of a pit, below-grade tank, or proposed alternative method  
☐ Modification to an existing permit/or registration  
☒ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

FEB 16 2016

Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.  
Operator: Bridgecreek Resources (CO),LLC OGRID #: 310262  
Address: 405 Urban Street, Suite 400, Lakewood, CO 80228  
Facility or well name: Kingsnake 34-6  
API Number: 30-045-35735 OCD Permit Number: 13257  
U/L or Qtr/Qtr F SENW Section 34 Township 31N Range 15W County: San Juan  
Center of Proposed Design: Latitude 36.8588684 Longitude 108.4067055 NAD: ☐ 1927 ☒ 1983  
Surface Owner: ☒ Federal ☐ State ☐ Private ☒ Tribal Trust or Indian Allotment

2.  
☐ Pit: Subsection F, G or J of 19.15.17.11 NMAC  
Temporary: ☒ Drilling ☐ Workover  
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☒ yes ☐ no  
☒ Lined ☐ Unlined Liner type: Thickness 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
☒ String-Reinforced  
Liner Seams: ☐ Welded ☐ Factory ☒ Other Burrito Wrapped Volume: \_\_\_\_\_ bbl Dimensions: L 61ft x W 35ft x D 12ft

3.  
☐ Below-grade tank: Subsection I of 19.15.17.11 NMAC  
Volume: \_\_\_\_\_ bbl Type of fluid: \_\_\_\_\_  
Tank Construction material: \_\_\_\_\_  
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off  
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other \_\_\_\_\_  
Liner type: Thickness \_\_\_\_\_ mil ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_

4.  
☐ Alternative Method:  
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.  
**Fencing:** Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)  
☐ Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)  
☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet  
☐ Alternate. Please specify \_\_\_\_\_



6.

**Netting:** Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)

☐ Screen ☐ Netting ☐ Other \_\_\_\_\_

☐ Monthly inspections (If netting or screening is not physically feasible)

7.

**Signs:** Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☒ Signed in compliance with 19.15.16.8 NMAC

8.

**Variances and Exceptions:**

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

**Please check a box if one or more of the following is requested, if not leave blank:**

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.

**Siting Criteria (regarding permitting):** 19.15.17.10 NMAC

**Instructions:** The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Siting criteria does not apply to drying pads or above-grade tanks.

**General siting**

**Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.**

- ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells

☐ Yes ☐ No  
☐ NA

**Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.**

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No  
☐ NA

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. **(Does not apply to below grade tanks)**

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☐ No

Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)**

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☐ No

Within an unstable area. **(Does not apply to below grade tanks)**

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☐ No

Within a 100-year floodplain. **(Does not apply to below grade tanks)**

- FEMA map

☐ Yes ☐ No

**Below Grade Tanks**

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

**Temporary Pit using Low Chloride Drilling Fluid** (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.)

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application.

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No



Within 100 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

### **Temporary Pit Non-low chloride drilling fluid**

Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

### **Permanent Pit or Multi-Well Fluid Management Pit**

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

10.

#### **Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC

**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_ or Permit Number: \_\_\_\_\_

11.

#### **Multi-Well Fluid Management Pit Checklist:** Subsection B of 19.15.17.9 NMAC

**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ A List of wells with approved application for permit to drill associated with the pit.
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- ☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_ or Permit Number: \_\_\_\_\_



12.  
**Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC

**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H<sub>2</sub>S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13.  
**Proposed Closure:** 19.15.17.13 NMAC

**Instructions:** Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

- Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Multi-well Fluid Management Pit  
☐ Alternative
- Proposed Closure Method: ☐ Waste Excavation and Removal  
☐ Waste Removal (Closed-loop systems only)  
☒ On-site Closure Method (Only for temporary pits and closed-loop systems)  
☐ In-place Burial ☒ On-site Trench Burial  
☐ Alternative Closure Method

14.  
**Waste Excavation and Removal Closure Plan Checklist:** (19.15.17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.  
**Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC

**Instructions:** Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

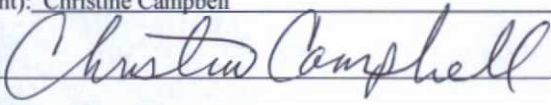


adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

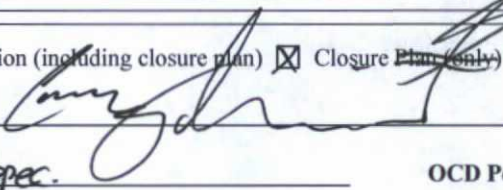
16.  
**On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  
☒ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC  
☒ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC  
☒ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC  
☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC  
☒ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC  
☒ Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC  
☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)  
☒ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  
☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  
☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.  
**Operator Application Certification:**  
 I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Christine Campbell Title: Regulatory Lead  
 Signature:  Date: 2/19/16  
 e-mail address: ccampbell@palomarnr.com Telephone: 303-945-2642

18.  
**OCD Approval:** ☐ Permit Application (including closure plan) ☒ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature:  Approval Date: 3/28/16  
 Title: Environmental Spec. OCD Permit Number: \_\_\_\_\_

19.  
**Closure Report (required within 60 days of closure completion):** 19.15.17.13 NMAC  
*Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.*

☒ Closure Completion Date: 12-22-15

20.  
**Closure Method:**  
☐ Waste Excavation and Removal ☒ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)  
☐ If different from approved plan, please explain.

21.  
**Closure Report Attachment Checklist:** *Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.*

☒ Proof of Closure Notice (surface owner and division)  
☐ Proof of Deed Notice (required for on-site closure for private land only)  
☒ Plot Plan (for on-site closures and temporary pits)  
☒ Confirmation Sampling Analytical Results (if applicable)  
☒ Waste Material Sampling Analytical Results (required for on-site closure)  
☒ Disposal Facility Name and Permit Number  
☒ Soil Backfilling and Cover Installation  
☒ Re-vegetation Application Rates and Seeding Technique  
☒ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude 36.8587483 Longitude 108.4060123 NAD: ☐ 1927 ☒ 1983



**Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Christine CampbellTitle: Regulatory LeadSignature: Christine CampbellDate: 2/9/16e-mail address: ccampbell@palomarnr.comTelephone: 303-945-2642



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**Bridgescreek Resources (Colorado) LLC**  
**Temporary Pit Closure Report**

In accordance with Rule 19.15.17.9 NMAC and 19.15.17.13 NMAC the following information describes the closure of the temporary pit on Bridgescreek locations. All proper documentation regarding closure activities is being included with the C-144.

- Detail on Capping and Covering, where applicable
- Plot Plan (Pit diagram)
- Sampling Results

**General Plan**

1. The preferred method of closure for all temporary pits will be on-site burial, pursuant to Subsection B of 19.15.17.9 and assuming that all criteria listed in sub-section (D) of 19.15.17.13 are met.
2. Prior to closure, the surface owner shall be notified at least 72 hrs but not more than one week prior to Bridgescreek's proposed closure plan using a means that provides proof of notice i.e., certified mail, return receipt requested.
  - a. **Email notification was provided to all required parties on 12/10/16. Certified mail is not required for Federal land per BLM/OCD MOU.**
3. Within 6 months of the Rig-off status occurring Bridgescreek will ensure that temporary pits are closed. Re-contouring and reseeding will occur during interim reclamation.
  - a. **Closure occurred from December 16 to December 22, 2015. Bridgescreek will notify OCD upon reseeding of reclaimed area no later than 6 months following rig release date.**
4. Notice of Closure will be given to the Aztec Division office 72 hours but not more than one week of closure via email, or verbally, The notification of closure will include the following:
  - i. Operator's name
  - ii. Location by Unit Letter, Section, Township, and Range. Well name and API Number
  - b. **Notification was done via email on 12/10/15 to all required parties.**
5. All contents, including synthetic pit liners, will be buried in place. By folding outer edges of the pit liner to overlap waste material, and then installing a geomembrane liner cover that is 20 mil string reinforced LLDPE, synthetic material, impervious, resistant to ultra violet



- light, petroleum hydrocarbons, salts, acid and alkaline.
- a. **The burial trench was lined with a 20 mil string reinforced LLDPE liner, stabilized cuttings were placed in liner and burrito wrapped to entirely cover the stabilized cuttings. The entire trench was capped with 4 feet of clean fill dirt and compacted to ground level.**
6. Cuttings will be contained in four-sided impermeable bins on location. Cuttings will be mixed with non-waste saw dust material in order to achieve the solidification process. The solidification process will be accomplished using a combination of natural drying and mechanically mixing. Cuttings will be mixed with non-waste, saw dust material to a consistency that is deemed a safe and stable. Cuttings will be mixed while in the four-sided bins. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents. The stabilized mixture must pass the paint filter liquids test (EPA SW-846, Method 9095 or other test methods approved by the division.
- a. **The cuttings were stabilized in steel bins on location at a 3:1 clean soil to pit contents ratio prior to passing the paint filter test method.**
7. A five point composite sample will be taken of the pit using sampling tools and all samples tested per Subsection D of 19.15.17.13 (5). The concentration of any contaminant in the stabilized waste is cannot be higher than the parameters listed in Table II of 19.15.17.13 NMAC. In the event that the criteria are not met, all contents will be handled per Subsection C of 19.15.17.13
- a. **A six-point composite sample was taken. Constituents listed in the UMU Table/COGCC Table are below standards NMOCD limits. The burial was approved by the BLM and the UMU Tribe Environmental Department. (Sample results are attached).**
  - b.
8. Upon completion of stabilization and testing in bins, the trench will be dug, lined and stabilized cuttings deposited and burrito-wrapped. The burrito-wrapped stabilized cuttings will be covered with a minimum of four feet of clean fill dirt.
- a. **Closure occurred from December 16 to December 22, 2015. A two-foot base layer of clean soil was placed at the bottom of the lined trench to protect the base from being impaired during mixing. Stabilized cuttings were placed in liner and burrito wrapped to entirely cover the stabilized cuttings. The entire trench was capped with 4 feet of clean fill dirt and compacted to ground level.**
9. Upon completion of interim reclamation re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be placed in areas where needed to prevent



erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.

- a. **The trench area was re-contoured to match fit, shape, line, form and texture of surrounding area. Re-shaping included drainage control, to prevent ponding, and erosion. Natural drainages were unimpeded and silt traps or berms were placed in areas where needed to prevent erosion on a large scale. Final re-contour has a uniform appearance with smooth surface, fitting natural landscape.**

10. Notification will be sent to OCD when the reclaimed area is seeded.

- a. **Notification will be provided to OCD via form 3160-5 Sundry Form upon completion.**

11. Following 19.15.17.13 (H) (5) (a-e), Bridgecreek shall seed the distributed areas the first growing season after the operator completes interim reclamation. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. Suggested BIA stipulated seed mixed will be used on federal lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover thorough two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs.

- a. **Seeding will begin during the next growing season. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BIA stipulated seed mixed will be used on federal lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover thorough two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs.**

12. The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center of the onsite burial upon the abandonment of all the wells on the pad. The marker will be a four foot tall riser with the operator's information at the time of all wells on the pad are abandoned. The operator's information will include the following: Operator Name, Lease Name, Well Name and Number, unit Number, Section, Township, Range and an indicator that the marker is an onsite burial location.

- a. **A steel temporary marker has been ordered will be placed in the center of the onsite burial trench as soon as the weather permits in accordance with 19.15.16.8 NMAC.**



Bridgecreek Resources (Colorado) LLC  
Kingsnake 34-6  
API: 30-045-35735  
NMOCD Pit Permit: 13257

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DISPOSAL FACILITY NAME AND PERMIT NUMBER

Aqua Moss Disposal  
3782 Provo  
Bloomfield, NM 87413

Sunco Disposal Well #001, API 30-045-28653



BIA Seed MIX 2015

UMU Indian Reservation

Species	Variety	% of Mix	#PLS/ac
Galleta	Viva	25	1.0
Alkali sacaton	Salado	25	0.4
Western wheatgrass	Arriba	15	2.4
Blue grama	Hatchita	15	0.5
Indian ricegrass	Nezpar	10	1.2
Sand dropseed	VNS	10	0.05



## 10. PLANS FOR SURFACE RECLAMATION

- The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.
- The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources and wildlife habitats. To ensure that the long term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning and vegetative productivity.
- Bridgecreek will notify the BLM, the UMU Energy and the UMU Environmental Department at least 3 days before beginning any of the approved surface reclamation operations.
- Within six months after the last well on the pad has been completed or plugged, Bridgecreek will contact the BLM by filing a Form 3160-5 with a reclamation plan for approval to reduce the size of the drill pad and reclaim the ground approximately as shown on Attachment H.
- The well pad and access road would cover an area of approximately 3.99 acres, but will be reduced after interim reclamation (following drilling and completion) to approximately 3.03 acres (+/- 0.3 acres) as shown on Attachment H.

### ■ INTERIM RECLAMATION

- A. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production. In areas planned for interim reclamation, all the surfacing material used to build the well pad will be removed and returned to the original source or recycled to repair or build roads and well pads.
- B. The areas planned for interim reclamation will then be recontoured to blend with the surrounding topography as much as possible. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the blend with surrounding topography during interim reclamation.
- C. Topsoil will be evenly respread and revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BIA approved seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
- D. BIA approved seed mix will be broadcast or drilled at an appropriate time prior to the winter season. Bridgecreek will notify the BLM with a Sundry Form 3160-5 upon completion of interim reclamation.
- E. Bridgecreek is responsible for consultation with the BLM and UMU Environmental Department for acceptable weed control methods and shall comply with the following:
  - 1) A BLM Sundry Form 3160-5 will be submitted for permission to use any pesticide other than "Roundup" by Scotts Company prior to use.



- 2) All commercial pesticide applicators must hold a valid New Mexico Commercial Applicators license, and the license must be valid for the applicable pesticide application category.
- F. Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.
- G. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.
- H. Interim reclamation will be considered successful when the desired vegetative species are established and evidence of vegetation reproduction, either by spreading of rhizomatous species or seed production, is established. Interim reclamation will additionally be deemed a success when erosion is controlled, weeds are considered a minimum threat, and a uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels.

■ **FINAL RECLAMATION**

- I. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.
- J. All surfacing material will be removed and returned to the original source pit or recycled to repair or build roads and well pads.
- K. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends with the surrounding topography. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation. Areas to be reclaimed will be recontoured to blend with the surrounding landscape, emphasizing restoration of existing drainage patterns and landform to pre-construction condition, to the extent practicable.
- L. Upon final reclamation after cessation of production operations, seedbed preparation of compacted areas will be ripped to a minimum depth of 12 inches, with a maximum furrow spacing of 2 feet. Where practicable, ripping will be conducted in two passes at perpendicular directions. Disking will be conducted if large clumps or clods remain after ripping. Any tilling or disking that occurs along the contour of the slope and seed drills will also be run along the contour to provide terracing and prevent rapid run-off and erosion. If broadcast seeding is used, a dozer or other tracked equipment will track perpendicular to the slope prior to broadcast seeding. Access will be ripped (along the contour when possible) to a minimum depth of 6 inches, water barred, and reseeded with a BIA approved seed mix.
- M. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BIA seed mixture, free of noxious weeds.
- N. Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area. This may include erosion control blankets, straw bales, or straw wattles as appropriate to limit erosion and sediment transport from any stockpiled soils.
- O. All unused equipment and structures including pipelines, tanks, etc. that serviced the well will be removed for proper disposal.

- 
- P. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.



**DGECREEK RESOURCES (CO) LLC**

**KINGSNAKE 34 - 6**

**SENECA, Section 34-T31N-R15W**

**2128' FNL & 2060' FWL**

**MU TRIBAL LEASE # 751-14-1038**

**API # 30-045-35735**

**SAN JUAN COUNTY, NM**

**EMERGENCY # (505) 599-5284**

## Christine Campbell

---

**From:** Kelly Williams  
**Sent:** Thursday, December 10, 2015 12:20 PM  
**To:** Scott Clow (sclow@utemountain.org); Gordon Hammond (ghammond@utemountain.org); Scott Clow (sclow@utemountain.org); Ryan Joyner (rjoyner@blm.gov); Cory.Smith@state.nm.us  
**Cc:** Christine Campbell; Steve Veal; Bob Schulz; John Thompson; andrew@adkinsenvironmental.com  
**Subject:** Advance Notification - Cuttings Burial  
**Attachments:** Sundry Notice - Cuttings.pdf

To Whom it May Concern:

This is an advance notification that Bridgecreek Resources (Colorado), LLC., operator, will be **burying the cuttings from the Kingsnake 34-6, API: 30-045-35735-00-X1** well on the Ute Mountain Ute Reservation in New Mexico.

Weeminuche will be burying the cuttings on **Tuesday morning – December 15<sup>th</sup>, 2015.**

### Pertinent Information

**Township:** 31N

**Range:** 15W

**Section:** 34

**County:** San Juan

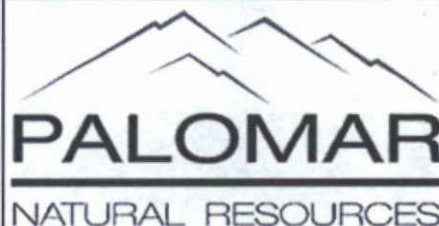
**Location:** Ute Mountain Ute Reservation in New Mexico

If you need any additional information please feel free to email me or call me directly at 303-945-2631.

Best regards,

Kelly Williams

**KELLY WILLIAMS**  
OFFICE MANAGER  
PALOMAR NATURAL RESOURCES  
405 Urban Street - Suite 400, Lakewood, CO 80228  
303-945-2630 (main office)  
303-945-2631 (direct)  
[kwilliams@palomarnr.com](mailto:kwilliams@palomarnr.com)





UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0135  
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. 751141038
2. Name of Operator BRIDGECREEK RESOURCES COLO LLC Contact: CHRISTINE CAMPBELL Email: ccampbell@bridgecreekresources.com		6. If Indian, Allottee or Tribe Name UTE MOUNTAIN UTE
3a. Address 405 URBAN STREET, SUITE 400 LAKEWOOD, CO 80228	3b. Phone No. (include area code) Ph: 303-945-2642	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 34 T31N R15W SENW 2128FNL 2060FWL 36.858868 N Lat, 108.406705 W Lon		8. Well Name and No. KINGSSNAKE 34-6
		9. API Well No. 30-045-35735-00-S1
		10. Field and Pool, or Exploratory VERDE GALLUP
		11. County or Parish, and State SAN JUAN COUNTY, NM

**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Emergency Pits or Closure
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Bridgecreek Resources (CO), LLC submits the attached 3:1 stabilized cuttings confirmation sample results from the Kingsnake 34-6 trench.

14. I hereby certify that the foregoing is true and correct. <b>Electronic Submission #328518 verified by the BLM Well Information System For BRIDGECREEK RESOURCES COLO LLC, sent to the Durango Committed to AFMSS for processing by TRACEY AYZE on 01/14/2016 (16BDT0025SE)</b>	
Name (Printed/Typed) CHRISTINE CAMPBELL	Title REGULATORY LEAD
Signature (Electronic Submission)	Date 01/14/2016

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By <b>ACCEPTED</b>	DAN RABINOWITZ Title ACTING MINERALS STAFF CHIEF	Date 01/22/2016
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office Durango

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***



Adkins Consulting, Inc.  
180 E. 12<sup>th</sup> Street, Suite #5 Durango, CO 81303  
(505)793-1140

January 10, 2015

Mr. Ryan Joyner  
Bureau of Land Management  
Tres Rios Field Office  
Land and Minerals  
15 Burnett Court  
Durango, CO 81301

RE: Analytical Result Amendment to Cutting Trench Closure Report. Bridgecreek Resources. Kingsnake  
34-6. Sec. 34, T31N.R15W.  
Lease #751-14-1038.

Mr. Joyner:

On the behalf of Bridgecreek Resources (Bridgecreek), Adkins Consulting Inc. (ACI) is pleased to submit this amendment to the closure plan report.

Attached is the Certificate of Analysis for the confirmation sample of mixed buried cuttings. Constituents listed in the UMU Table are below standards except for pH and arsenic. Arsenic was discussed in the closure plan and is not evaluated further.

Sample ID	Date	TPH(EPA 8015)	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Chloride	Arsenic	pH
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	--
Burial Confirmation	12/21/2015	32.9	<0.10	0.3	0.11	0.37	245	5.7	9.32
UMU Table (COGCC Table 910-1)		500	0.17	85	100	175		0.39	6-9
NMOCD (Rule 19.15.17; DTW > 100 ft)		1,000	10						
CDPHE-HMWMD/EPA RSLs			5.10	4,700	25	250		3.00	
Notes:									
exceeds UMU Table standards									
exceeds EPA RSL Standards									

pH exceeds standards as shown in the above table. pH is important in nutrient uptake in plants. The mixed drill cuttings are encapsulated in a 20-mil LLDPE string-reinforced liner and covered with 4-feet of clean fill dirt; therefore, pH will not effect revegetation efforts.



The extent of the burial trench was identified with a T-post in each corner (Figure 1, below). A permanent center marker will be placed according to the SUPO to identify the burial cell and dimensions.



Figure 1: T-Posts placed at each corner of cuttings trench.

If you have any questions or comments please contact me at 970-570-9535.

Andrew Parker  
Adkins Consulting, Inc  
Durango, CO  
970-570-9535  
andrew@adkinsenvironmental.com

Cc: Christine Campbell, Bridgecreek Resources

# Appendix A





Figure 1: Excavating the cuttings trench.

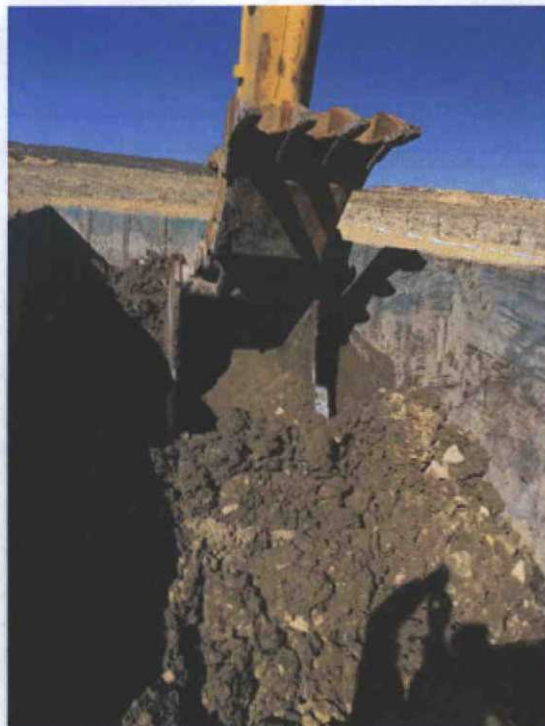


Figure2: Mixing the drill cuttings with clean soil from trench excavation. Stabilization was achieved at a ratio of 1 (clean): 1 (cuttings).



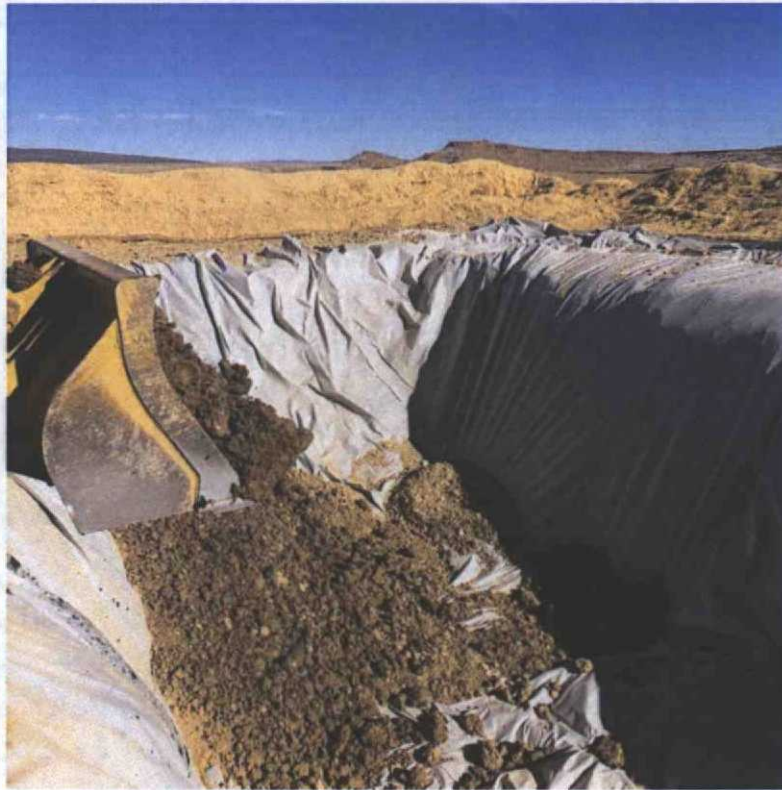


Figure 3: Placing the 3(clean):1(cuttings) mixed drill cuttings into the cuttings trench. The trench is lined with a 20-mil string reinforced LLDPE liner.



Figure 4: Spreading the mixed cuttings in the burial trench.





Figure 5: Mixed (3:1) drill cuttings. The soil matrix is approximately 1/3 rock, 1/3 fines, and 1/3 stabilized cuttings.



Figure 6: Bedrock from the excavation spoils that make up a portion of the buried cuttings matrix.



## Analytical Report

### Report Summary

Client: Bridgecreek Resources, LLC

Chain Of Custody Number:

Samples Received: 12/21/2015 3:50:00PM

Job Number: 15090-0001

Work Order: P512045

Project Name/Location: Kingsnake 34-6

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/6/16

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

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[envirotech-inc.com](http://envirotech-inc.com)

[laboratory@envirotech-inc.com](mailto:laboratory@envirotech-inc.com)





Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Burial Confirmation (3:1)	P512045-01A	Soil	12/21/15	12/21/15	Glass Jar, 4 oz.
	P512045-01B	Soil	12/21/15	12/21/15	Glass Jar, 4 oz.
	P512045-01C	Soil	12/21/15	12/21/15	Glass Jar, 4 oz.
	P512045-01D	Soil	12/21/15	12/21/15	Glass Jar, 4 oz.

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

**Burial Confirmation (3:1)**  
**P512045-01 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.10	mg/kg	1	1552010	12/22/15	12/22/15	EPA 8021B	
Toluene	0.30	0.10	mg/kg	1	1552010	12/22/15	12/22/15	EPA 8021B	
Ethylbenzene	0.11	0.10	mg/kg	1	1552010	12/22/15	12/22/15	EPA 8021B	
p,m-Xylene	0.25	0.20	mg/kg	1	1552010	12/22/15	12/22/15	EPA 8021B	
o-Xylene	0.12	0.10	mg/kg	1	1552010	12/22/15	12/22/15	EPA 8021B	
Total Xylenes	0.37	0.10	mg/kg	1	1552010	12/22/15	12/22/15	EPA 8021B	
Total BTEX	0.78	0.10	mg/kg	1	1552010	12/22/15	12/22/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		115 %		50-150	1552010	12/22/15	12/22/15	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1552010	12/21/15	12/22/15	EPA 8015D	
Diesel Range Organics (C10-C28)	32.9	25.0	mg/kg	1	1552008	12/21/15	12/22/15	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1552008	12/21/15	12/22/15	EPA 8015D	
Surrogate: n-Nonane		106 %		50-200	1552008	12/21/15	12/22/15	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		88.7 %		50-150	1552010	12/21/15	12/22/15	EPA 8015D	
<b>Total Metals by 6010</b>									
Arsenic	5.70	0.94	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Barium	212	9.40	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Cadmium	1.30	0.94	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Chromium	55.9	4.70	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Copper	3.51	1.88	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Lead	35.0	0.94	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Mercury	ND	0.94	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Nickel	21.6	0.94	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Selenium	ND	4.70	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Silver	ND	0.94	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	
Zinc	111	1.88	mg/kg	0.9	1552017	12/22/15	12/22/15	EPA 6010C	

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

**Burial Confirmation (3:1)**  
**P512045-01 (Solid)**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Cation/Anion Analysis										
pH @25°C	9.32		pH Units	1		1552019	12/22/15 13:33	12/22/15 13:50	9040C/4500 H	
Electrical Conductivity	4260		umhos/cm	1		1552019	12/22/15 13:33	12/22/15 13:50	9050A/2510	
Sodium Absorption Ratio	1.27		N/A	1		1552023	12/23/15	12/23/15	[CALC]	
Chloride	245	20.0	mg/kg	1		1552013	12/22/15	12/22/15	EPA 300.0	
Calcium	54.9	0.50	mg/L	1		1552020	12/22/15	12/22/15	EPA 6010C	
Magnesium	3.11	0.20	mg/L	1		1552020	12/22/15	12/22/15	EPA 6010C	
Sodium	35.8	2.00	mg/L	1		1552020	12/22/15	12/22/15	EPA 6010C	
Boron-Hot Water Soluble by EPA 6010										
Boron	ND	0.50	mg/L	1		1552018	12/22/15	12/22/15	EPA 6010C	

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405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

**Volatile Organics by EPA 8021 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1552010 - Purge and Trap EPA 5030A</b>										
<b>Blank (1552010-BLK1)</b>				Prepared: 21-Dec-15 Analyzed: 22-Dec-15						
Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	0.331		"	0.320		103	50-150			
<b>LCS (1552010-BS1)</b>				Prepared: 21-Dec-15 Analyzed: 22-Dec-15						
Benzene	10.6	0.10	mg/kg	10.0		106	70-130			
Toluene	10.4	0.10	"	10.0		104	70-130			
Ethylbenzene	10.4	0.10	"	10.0		104	70-130			
p,m-Xylene	20.7	0.20	"	20.0		103	70-130			
o-Xylene	10.1	0.10	"	10.0		101	70-130			
Surrogate: 4-Bromochlorobenzene-PID	0.335		"	0.320		105	50-150			
<b>Matrix Spike (1552010-MS1)</b>				Source: P512043-01 Prepared: 21-Dec-15 Analyzed: 22-Dec-15						
Benzene	11.1	0.10	mg/kg	10.0	ND	111	54.3-133			
Toluene	10.9	0.10	"	10.0	ND	109	61.4-130			
Ethylbenzene	10.9	0.10	"	10.0	ND	109	61.4-133			
p,m-Xylene	21.6	0.20	"	20.0	ND	108	63.3-131			
o-Xylene	10.6	0.10	"	10.0	ND	106	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	0.331		"	0.320		103	50-150			
<b>Matrix Spike Dup (1552010-MSD1)</b>				Source: P512043-01 Prepared: 21-Dec-15 Analyzed: 22-Dec-15						
Benzene	10.0	0.10	mg/kg	10.0	ND	100	54.3-133	10.4	20	
Toluene	9.82	0.10	"	10.0	ND	98.3	61.4-130	10.5	20	
Ethylbenzene	9.82	0.10	"	10.0	ND	98.3	61.4-133	10.5	20	
p,m-Xylene	19.5	0.20	"	20.0	ND	97.5	63.3-131	10.3	20	
o-Xylene	9.60	0.10	"	10.0	ND	96.1	63.3-131	9.51	20	
Surrogate: 4-Bromochlorobenzene-PID	0.334		"	0.320		104	50-150			

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1552008 - DRO Extraction EPA 3550M</b>										
<b>Blank (1552008-BLK1)</b>				Prepared & Analyzed: 21-Dec-15						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Surrogate: n-Nonane	57.4		"	50.0		115	50-200			
<b>LCS (1552008-BS1)</b>				Prepared & Analyzed: 21-Dec-15						
Diesel Range Organics (C10-C28)	550	25.0	mg/kg	500		110	38-132			
Surrogate: n-Nonane	55.3		"	50.0		111	50-200			
<b>Matrix Spike (1552008-MS1)</b>				Source: P512043-01		Prepared & Analyzed: 21-Dec-15				
Diesel Range Organics (C10-C28)	543	25.0	mg/kg	500	ND	109	38-132			
Surrogate: n-Nonane	57.3		"	50.0		115	50-200			
<b>Matrix Spike Dup (1552008-MSD1)</b>				Source: P512043-01		Prepared: 21-Dec-15 Analyzed: 22-Dec-15				
Diesel Range Organics (C10-C28)	527	25.0	mg/kg	500	ND	105	38-132	2.99	20	
Surrogate: n-Nonane	53.9		"	50.0		108	50-200			

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Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

### Nonhalogenated Organics by 8015 - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1552010 - Purge and Trap EPA 5030A</b>										
<b>Blank (1552010-BLK1)</b>				Prepared: 21-Dec-15 Analyzed: 22-Dec-15						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	0.305		"	0.320		95.2	50-150			
<b>LCS (1552010-BS1)</b>				Prepared: 21-Dec-15 Analyzed: 22-Dec-15						
Gasoline Range Organics (C6-C10)	112	20.0	mg/kg	106		106	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	0.299		"	0.320		93.5	50-150			
<b>Matrix Spike (1552010-MS1)</b>				Source: P512043-01 Prepared: 21-Dec-15 Analyzed: 22-Dec-15						
Gasoline Range Organics (C6-C10)	118	20.0	mg/kg	106	ND	111	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	0.304		"	0.320		95.0	50-150			
<b>Matrix Spike Dup (1552010-MSD1)</b>				Source: P512043-01 Prepared: 21-Dec-15 Analyzed: 22-Dec-15						
Gasoline Range Organics (C6-C10)	108	20.0	mg/kg	106	ND	102	70-130	9.03	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	0.306		"	0.320		95.7	50-150			

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Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

**Total Metals by 6010 - Quality Control**  
**Envirotech Analytical Laboratory**

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

**Batch 1552017 - Metal Solid Digestion EPA 3051A**

**Blank (1552017-BLK1)**

Prepared & Analyzed: 22-Dec-15

Arsenic	ND	1.00	mg/kg
Barium	ND	10.0	"
Cadmium	ND	1.00	"
Chromium	ND	5.00	"
Copper	ND	2.00	"
Lead	ND	1.00	"
Mercury	ND	1.00	"
Nickel	ND	1.00	"
Selenium	ND	5.00	"
Silver	ND	1.00	"
Zinc	ND	2.00	"

**LCS (1552017-BS1)**

Prepared & Analyzed: 22-Dec-15

Arsenic	76.1	1.00	mg/kg	90.0	84.5	80-120
Barium	82.0	10.0	"	90.0	91.1	80-120
Cadmium	79.6	1.00	"	90.0	88.5	80-120
Chromium	81.6	5.00	"	90.0	90.6	80-120
Copper	72.0	2.00	"	90.0	80.0	80-120
Lead	81.4	1.00	"	90.0	90.5	80-120
Mercury	82.0	1.00	"	100	82.0	80-120
Nickel	78.9	1.00	"	90.0	87.6	80-120
Selenium	73.6	5.00	"	90.0	81.8	80-120
Silver	78.2	1.00	"	90.0	86.9	80-120
Zinc	78.5	2.00	"	90.0	87.2	80-120

**Matrix Spike (1552017-MS1)**

Source: P512043-01

Prepared & Analyzed: 22-Dec-15

Arsenic	81.7	0.98	mg/kg	88.2	1.72	90.7	75-125
Barium	157	9.80	"	88.2	76.3	92.0	75-125
Cadmium	82.5	0.98	"	88.2	ND	93.5	75-125
Chromium	91.3	4.90	"	88.2	6.81	95.8	75-125
Copper	73.5	1.96	"	88.2	ND	83.3	75-125
Lead	92.1	0.98	"	88.2	6.97	96.5	75-125
Mercury	82.6	0.98	"	98.0	0.99	83.2	75-125
Nickel	84.0	0.98	"	88.2	2.50	92.4	75-125
Selenium	79.0	4.90	"	88.2	ND	89.6	75-125
Silver	2.82	0.98	"	88.2	ND	3.20	75-125
Zinc	96.3	1.96	"	88.2	12.9	94.5	75-125

SPK1

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405 Urban St Suite 400  
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Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

**Total Metals by 6010 - Quality Control**  
**Envirotech Analytical Laboratory**

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

**Batch 1552017 - Metal Solid Digestion EPA 3051A**

Matrix Spike Dup (1552017-MSD1)	Source: P512043-01			Prepared & Analyzed: 22-Dec-15						
Arsenic	76.4	0.96	mg/kg	86.7	1.72	86.1	75-125	6.73	20	
Barium	162	9.63	"	86.7	76.3	98.8	75-125	2.81	20	
Cadmium	78.0	0.96	"	86.7	ND	90.0	75-125	5.66	20	
Chromium	86.6	4.82	"	86.7	6.81	92.1	75-125	5.23	20	
Copper	68.9	1.93	"	86.7	ND	79.5	75-125	6.51	20	
Lead	86.4	0.96	"	86.7	6.97	91.7	75-125	6.34	20	
Mercury	80.5	0.96	"	96.3	0.99	82.6	75-125	2.49	20	
Nickel	79.6	0.96	"	86.7	2.50	88.9	75-125	5.40	20	
Selenium	72.4	4.82	"	86.7	ND	83.5	75-125	8.78	20	
Silver	77.4	0.96	"	86.7	ND	89.3	75-125	186	20	D1
Zinc	90.4	1.93	"	86.7	12.9	89.3	75-125	6.32	20	

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

**Cation/Anion Analysis - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1552013 - Anion Extraction EPA 300.0</b>										
<b>Blank (1552013-BLK1)</b>				Prepared & Analyzed: 22-Dec-15						
Chloride	ND	20.0	mg/kg							
<b>LCS (1552013-BS1)</b>				Prepared & Analyzed: 22-Dec-15						
Chloride	489	20.0	mg/kg	500		97.8	90-110			
<b>Matrix Spike (1552013-MS1)</b>				Source: P512043-01 Prepared & Analyzed: 22-Dec-15						
Chloride	499	20.0	mg/kg	500	ND	99.7	80-120			
<b>Matrix Spike Dup (1552013-MSD1)</b>				Source: P512043-01 Prepared & Analyzed: 22-Dec-15						
Chloride	501	20.0	mg/kg	500	ND	100	80-120	0.400	20	

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

### Cation/Anion Analysis - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1552020 - Metal Water Digestion EPA 3015A</b>										
<b>Blank (1552020-BLK1)</b>				Prepared & Analyzed: 22-Dec-15						
Calcium	ND	0.50	mg/L							
Magnesium	ND	0.20	"							
Sodium	ND	2.00	"							
<b>LCS (1552020-BS1)</b>				Prepared & Analyzed: 22-Dec-15						
Calcium	93.0	0.50	mg/L	100		93.0	80-120			
Magnesium	88.4	0.20	"	100		88.4	80-120			
Sodium	98.0	2.00	"	100		98.0	80-120			
<b>Matrix Spike (1552020-MS1)</b>				Source: P512043-01		Prepared & Analyzed: 22-Dec-15				
Calcium	99.7	0.50	mg/L	100	8.77	90.9	75-125			
Magnesium	93.5	0.20	"	100	5.44	88.0	75-125			
Sodium	100	2.00	"	100	4.55	95.8	75-125			
<b>Matrix Spike Dup (1552020-MSD1)</b>				Source: P512043-01		Prepared & Analyzed: 22-Dec-15				
Calcium	98.8	0.50	mg/L	100	8.77	90.0	75-125	0.929	20	
Magnesium	92.3	0.20	"	100	5.44	86.9	75-125	1.24	20	
Sodium	99.1	2.00	"	100	4.55	94.6	75-125	1.26	20	

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Bridgescreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: Christine Campbell

Reported:  
06-Jan-16 12:15

### Boron-Hot Water Soluble by EPA 6010 - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1552018 - Boron HW Soluble Digestion</b>										
<b>Blank (1552018-BLK1)</b>				Prepared & Analyzed: 22-Dec-15						
Boron	ND	0.50	mg/L							
<b>LCS (1552018-BS1)</b>				Prepared & Analyzed: 22-Dec-15						
Boron	4.51		mg/L	4.00		113	80-120			
<b>Matrix Spike (1552018-MS1)</b>				Source: P512045-01 Prepared & Analyzed: 22-Dec-15						
Boron	2.45		mg/L	4.00	0.11	58.6	75-125			SPK1
<b>Matrix Spike Dup (1552018-MSD1)</b>				Source: P512045-01 Prepared & Analyzed: 22-Dec-15						
Boron	2.68		mg/L	4.00	0.11	64.4	75-125	9.00	20	SPK1

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Project Number: 15090-0001  
Project Manager: Christine Campbell

**Reported:**  
06-Jan-16 12:15

#### Notes and Definitions

SPK1 The spike recovery is outside of quality control limits.

D1 Duplicates or Matrix Spike Duplicates Relative Percent Difference is outside of control limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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# ANALYTICAL REPORT

December 31, 2015



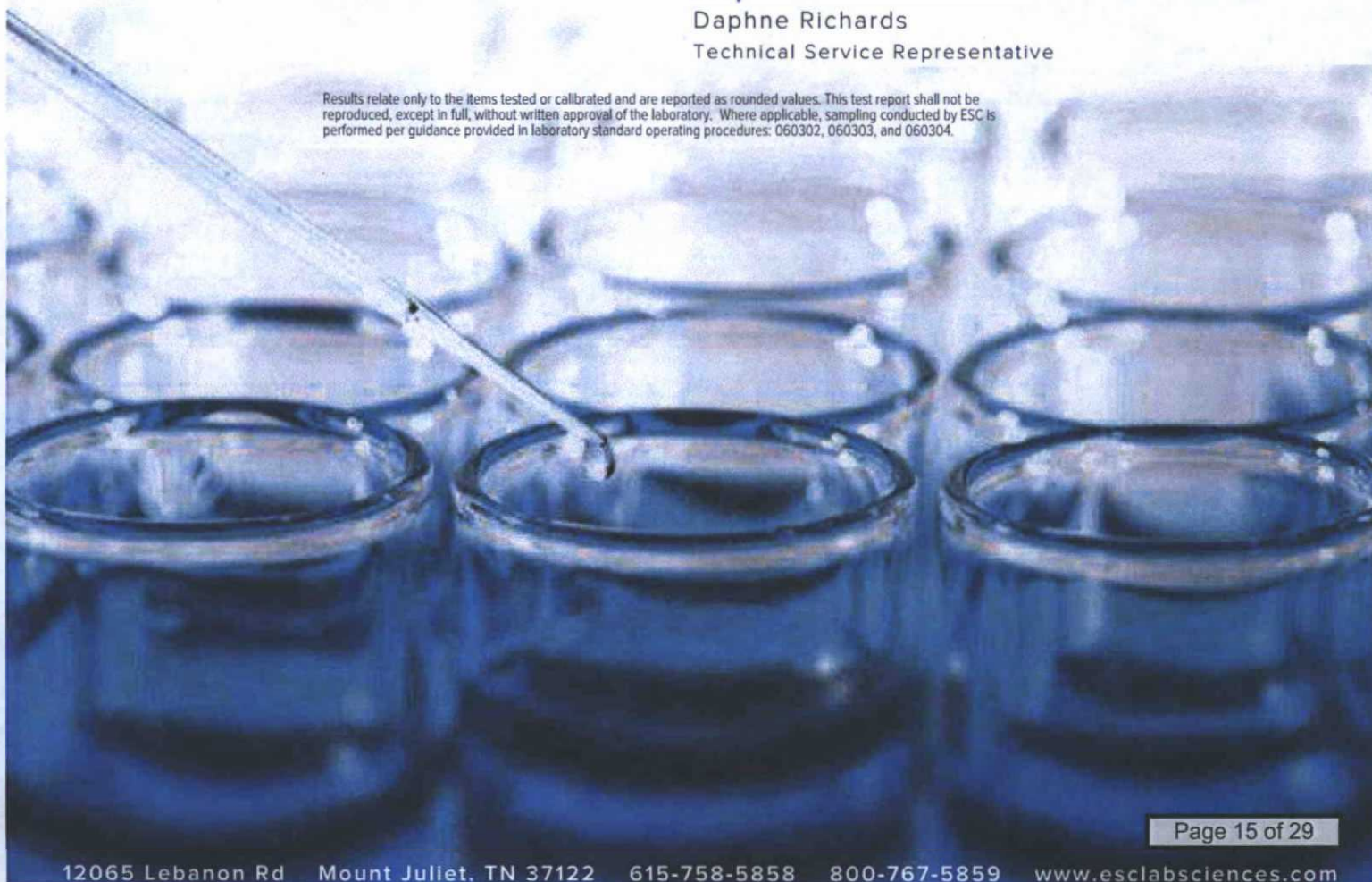
## EnviroTech- NM

Sample Delivery Group: L808781  
Samples Received: 12/23/2015  
Project Number: 15090-0001  
Description: Kingsnake 34-6  
Site: P512045  
Report To: Tim Cain and Lynn Cook  
5796 US. Highway 64  
Farmington, NM 87401

Entire Report Reviewed By:

Daphne Richards  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





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<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

## BURIAL CONFIRMATION (3:1) L808781-01 Solid

Collected by  
A. Parker

Collected date/time  
12/21/15 14:00

Received date/time  
12/23/15 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG838629	1	12/29/15 20:40	12/30/15 11:27	FMB
Total Solids by Method 2540 G-2011	WG838723	1	12/28/15 14:21	12/28/15 14:28	MEL
Wet Chemistry by Method 2580 B-2011	WG838169	1	12/23/15 19:04	12/23/15 20:11	MZ
Wet Chemistry by Method 3060A/7196A	WG838198	1	12/28/15 08:43	12/28/15 14:39	SJM
Wet Chemistry by Method 9045D	WG838148	1	12/26/15 10:13	12/26/15 10:13	SJM

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Daphne Richards  
Technical Service Representative

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al<sup>9</sup> Sc

## BURIAL CONFIRMATION (3:1)

Collected date/time: 12/21/15 14:00

## SAMPLE RESULTS - 01

L808781

ONE LAB. NATIONWIDE.

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	86.8		1	12/28/2015 14:28	<a href="#">WG838723</a>

## Wet Chemistry by Method 2580 B-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
ORP	mV		1	12/23/2015 20:11	<a href="#">WG838169</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	mg/kg		mg/kg			
	ND		2.31	1	12/28/2015 14:39	<a href="#">WG838198</a>

## Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	su		1	12/26/2015 10:13	<a href="#">WG838148</a>

## Sample Narrative:

9045D L808781-01 WG838148: 9.21 at 23.3c

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Anthracene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Acenaphthene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Acenaphthylene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Benzo(a)anthracene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Benzo(a)pyrene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Benzo(b)fluoranthene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Benzo(g,h,i)perylene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Benzo(k)fluoranthene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Chrysene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Dibenz(a,h)anthracene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Fluoranthene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Fluorene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Indeno(1,2,3-cd)pyrene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Naphthalene	0.0358		0.0231	1	12/30/2015 11:27	<a href="#">WG838629</a>
Phenanthrene	0.00838		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
Pyrene	ND		0.00692	1	12/30/2015 11:27	<a href="#">WG838629</a>
1-Methylnaphthalene	0.0237		0.0231	1	12/30/2015 11:27	<a href="#">WG838629</a>
2-Methylnaphthalene	0.0339		0.0231	1	12/30/2015 11:27	<a href="#">WG838629</a>
2-Chloronaphthalene	ND		0.0231	1	12/30/2015 11:27	<a href="#">WG838629</a>
(S) Nitrobenzene-d5	93.3		22.1-146		12/30/2015 11:27	<a href="#">WG838629</a>
(S) 2-Fluorobiphenyl	83.7		40.6-122		12/30/2015 11:27	<a href="#">WG838629</a>
(S) p-Terphenyl-d14	62.9		32.2-131		12/30/2015 11:27	<a href="#">WG838629</a>



WG838723

Total Solids by Method 2540 G-2011

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

L808781-01

## Method Blank (MB)

(MB) 12/28/15 14:28

Analyte	MB Result %	MB Qualifier	MB RDL %
Total Solids	0.000200		

## L808794-08 Original Sample (OS) • Duplicate (DUP)

(OS) 12/28/15 14:28 • (DUP) 12/28/15 14:28

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	85.2	84.9	1	0.353		5

## Laboratory Control Sample (LCS)

(LCS) 12/28/15 14:28

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

WG838169

Wet Chemistry by Method 2580 B-2011

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

L808781-01

## L808166-05 Original Sample (OS) • Duplicate (DUP)

(OS) 12/23/15 20:11 • (DUP) 12/23/15 20:11

Analyte	Original Result mV	DUP Result mV	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
ORP	87.0	87	1	0.000		20

## L808781-01 Original Sample (OS) • Duplicate (DUP)

(OS) 12/23/15 20:11 • (DUP) 12/23/15 20:11

Analyte	Original Result mV	DUP Result mV	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
ORP	55.0	55	1	0.000		20

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/23/15 20:11 • (LCSD) 12/23/15 20:11

Analyte	Spike Amount mV	LCS Result mV	LCSD Result mV	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
ORP	100	100	99	100	99.0	90.0-110			1.01	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



WG838198

Wet Chemistry by Method 3060A/7196A

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

L808781-01

## Method Blank (MB)

(MB) 12/28/15 14:29

	MB Result	MB Qualifier	MB RDL
Analyte	mg/kg		mg/kg
Chromium,Hexavalent	ND		2.00

## L808818-02 Original Sample (OS) • Duplicate (DUP)

(OS) 12/28/15 14:43 • (DUP) 12/28/15 14:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	2.24	2.12	1	5.50		20

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/28/15 14:33 • (LCSD) 12/28/15 14:33

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chromium,Hexavalent	97.4	86.2	87.0	88.5	89.3	80.0-120			0.924	20

## L808818-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/28/15 14:43 • (MS) 12/28/15 14:49 • (MSD) 12/28/15 14:49

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	2.24	15.0	17.6	63.8	76.8	1	75.0-125	J6		16.0	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

WG838148

Wet Chemistry by Method 9045D

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

L808781-01

## L808770-01 Original Sample (OS) • Duplicate (DUP)

(OS) 12/26/15 10:13 • (DUP) 12/26/15 10:13

Analyte	Original Result SU	DUP Result SU	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
pH	8.15	8.14	1	0.123		1

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/26/15 10:13 • (LCSD) 12/26/15 10:13

Analyte	Spike Amount SU	LCS Result SU	LCSD Result SU	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
pH	6.72	6.70	6.71	99.7	99.9	98.5-102			0.149	1

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



WG838629

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

L808781-01

## Method Blank (MB)

(MB) 12/30/15 10:03

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Anthracene	ND		0.00600
Acenaphthene	ND		0.00600
Acenaphthylene	ND		0.00600
Benzo(a)anthracene	ND		0.00600
Benzo(a)pyrene	ND		0.00600
Benzo(b)fluoranthene	ND		0.00600
Benzo(g,h,i)perylene	ND		0.00600
Benzo(k)fluoranthene	ND		0.00600
Chrysene	ND		0.00600
Dibenz(a,h)anthracene	ND		0.00600
Fluoranthene	ND		0.00600
Fluorene	ND		0.00600
Indeno(1,2,3-cd)pyrene	ND		0.00600
Naphthalene	ND		0.0200
Phenanthrene	ND		0.00600
Pyrene	ND		0.00600
1-Methylnaphthalene	ND		0.0200
2-Methylnaphthalene	ND		0.0200
2-Chloronaphthalene	ND		0.0200
(S) p-Terphenyl-d14	84.7		32.2-131
(S) Nitrobenzene-d5	97.9		22.1-146
(S) 2-Fluorobiphenyl	92.9		40.6-122

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/30/15 08:56 • (LCSD) 12/30/15 09:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	0.0596	0.0606	74.5	75.8	50.3-130			1.69	20
Acenaphthene	0.0800	0.0584	0.0572	72.9	71.5	52.4-120			2.03	20
Acenaphthylene	0.0800	0.0599	0.0568	74.9	71.1	49.6-120			5.25	20
Benzo(a)anthracene	0.0800	0.0610	0.0628	76.3	78.5	46.7-125			2.85	20
Benzo(a)pyrene	0.0800	0.0565	0.0555	70.6	69.4	42.3-119			1.67	20
Benzo(b)fluoranthene	0.0800	0.0586	0.0601	73.3	75.1	43.6-124			2.42	20
Benzo(g,h,i)perylene	0.0800	0.0673	0.0676	84.1	84.6	45.1-132			0.490	20
Benzo(k)fluoranthene	0.0800	0.0624	0.0646	78.0	80.7	46.1-131			3.41	20



WG838629

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

L808781-01

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 12/30/15 08:56 • (LCSD) 12/30/15 09:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chrysene	0.0800	0.0635	0.0659	79.4	82.4	49.5-131			3.74	20
Dibenz(a,h)anthracene	0.0800	0.0648	0.0682	81.0	85.3	44.8-133			5.15	20
Fluoranthene	0.0800	0.0607	0.0637	75.9	79.6	49.3-128			4.79	20
Fluorene	0.0800	0.0638	0.0610	79.8	76.2	50.6-121			4.63	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0653	0.0697	81.6	87.2	46.1-135			6.56	20
Naphthalene	0.0800	0.0621	0.0638	77.6	79.7	49.6-115			2.75	20
Phenanthrene	0.0800	0.0587	0.0592	73.3	74.0	48.8-121			0.920	20
Pyrene	0.0800	0.0620	0.0695	77.5	86.9	44.7-130			11.4	20
1-Methylnaphthalene	0.0800	0.0657	0.0677	82.1	84.6	50.6-122			3.03	20
2-Methylnaphthalene	0.0800	0.0671	0.0672	83.9	84.0	50.4-120			0.0600	20
2-Chloronaphthalene	0.0800	0.0539	0.0621	67.4	77.6	53.9-121			14.0	20
(S) p-Terphenyl-d14				71.3	74.5	32.2-131				
(S) Nitrobenzene-d5				85.8	83.6	22.1-146				
(S) 2-Fluorobiphenyl				69.9	75.2	40.6-122				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 Al

9 Sc

## L808593-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/30/15 17:05 • (MS) 12/30/15 17:26 • (MSD) 12/30/15 17:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	ND	0.0482	0.0477	60.3	59.7	1	26.5-141			1.09	21.2
Acenaphthene	0.0800	ND	0.0498	0.0499	62.3	62.4	1	31.9-130			0.200	20
Acenaphthylene	0.0800	ND	0.0533	0.0547	66.7	68.4	1	33.7-129			2.52	20
Benzo(a)anthracene	0.0800	0.000613	0.0484	0.0468	59.7	57.8	1	18.3-136			3.29	24.6
Benzo(a)pyrene	0.0800	ND	0.0467	0.0453	58.4	56.7	1	16.9-135			2.94	25.2
Benzo(b)fluoranthene	0.0800	ND	0.0428	0.0412	53.5	51.6	1	10.0-134			3.70	30.9
Benzo(g,h,i)perylene	0.0800	ND	0.0473	0.0451	59.2	56.4	1	14.1-140			4.76	25.5
Benzo(k)fluoranthene	0.0800	ND	0.0489	0.0486	61.1	60.7	1	18.2-138			0.690	25.6
Chrysene	0.0800	ND	0.0511	0.0502	63.9	62.8	1	17.1-145			1.79	24.2
Dibenz(a,h)anthracene	0.0800	ND	0.0520	0.0501	65.0	62.7	1	18.5-138			3.69	24.3
Fluoranthene	0.0800	ND	0.0454	0.0470	56.8	58.7	1	15.4-144			3.35	27.1
Fluorene	0.0800	ND	0.0512	0.0527	64.0	65.9	1	23.5-136			2.84	20
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0495	0.0477	61.9	59.6	1	14.5-142			3.80	25.8
Naphthalene	0.0800	0.000723	0.0598	0.0622	73.9	76.9	1	29.2-128			3.90	20
Phenanthrene	0.0800	ND	0.0461	0.0458	57.6	57.2	1	20.1-134			0.670	23.6
Pyrene	0.0800	ND	0.0523	0.0487	65.4	60.9	1	11.0-148			7.17	26.1



WG838629

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

L808781-01

## L808593-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/30/15 17:05 • (MS) 12/30/15 17:26 • (MSD) 12/30/15 17:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1-Methylnaphthalene	0.0800	ND	0.0584	0.0612	73.0	76.5	1	28.4-137			4.77	20
2-Methylnaphthalene	0.0800	ND	0.0584	0.0607	72.9	75.8	1	26.6-137			3.88	20
2-Chloronaphthalene	0.0800	ND	0.0536	0.0526	67.0	65.8	1	38.6-126			1.78	20
(S) p-Terphenyl-d14					70.7	85.5		32.2-131				
(S) Nitrobenzene-d5					87.6	111		22.1-146				
(S) 2-Fluorobiphenyl					76.3	94.0		40.6-122				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc

**Abbreviations and Definitions**

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

**Qualifier Description**

J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
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<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn<sup>5</sup> Sr<sup>6</sup> Qc

GI

<sup>B</sup> AI<sup>9</sup> Sc



# ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.  
 \* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-05-15-05		

## Third Party & Federal Accreditations

A2LA - ISO 17025	1461.01	AIHA	100789
A2LA - ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>na</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**





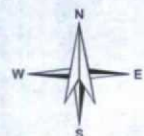
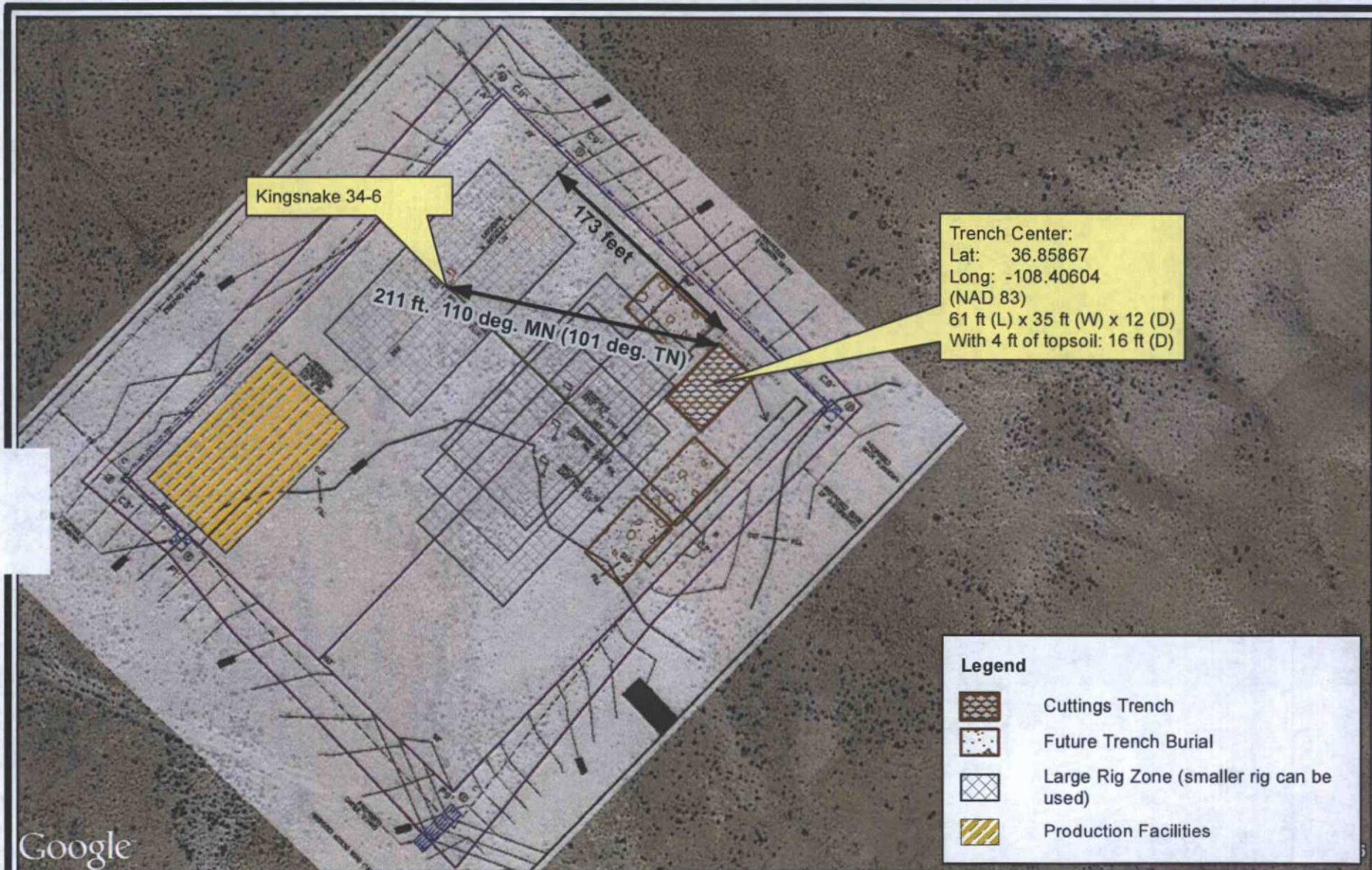
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# Exhibits

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0 50 100  
Feet



**Adkins Consulting Inc.**  
 180 East 12th Street  
 Durango, CO 81303  
 505-793-1140

Cuttings Trench  
 Existing and Future  
 Bridgecreek Resources  
 Kingsnake 34-6

Exhibit 1

December  
 2015



# Tables

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Table 1: Summary of Analytical Results

Sample ID	Description	Date	DRO (80150)	MRO (80150)	GRO (80150)	TPH(EPA 8015)	Benzene	Toluene	Ethylbenzene	Xylenes (total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1 (not evaluated in report)	3:1 field composite (omit)	11/13/2015	509	na	96.2	605.2	0.33	1.18	0.67	2.43
2	5pt composite from bin 1	11/13/2015	106	na	141	247	0.49	1.73	1.05	3.77
3	5pt composite from bin 2	11/13/2015	419	na	66.9	485.9	0.26	0.9	0.53	1.85
4	5pt composite from bin 3	11/13/2015	189	na	102	291	1.06	2.42	0.87	2.94
Spill Pile	From Prairie Falcon 19-1	3/31/2015	<10	na	<5.0	<65	<0.050	<0.050	<0.050	<0.099
URMU Table (COSC Table 910-1)						500	0.17	85	100	175
NMOC (Rule 19-15.17; DFW > 100 ft)						1,000	10			
CDPNE-HMRMND/EPA RSLs							5.10	4,700	25	250

## Notes:

exceeds URMU Table standards

exceeds EPA RSL Standards

na = not analyzed



Table 1: Summary of Analytical Results

Sample ID	Description	Date	Chloride mg/kg	Mercury mg/kg	Arsenic mg/kg	Barium mg/kg	Boron mg/kg	Cadmium mg/kg	Chromium mg/kg	Chromium VI mg/kg	Copper mg/kg	Lead mg/kg	Nickel mg/kg	Selenium mg/kg	Silver mg/kg
1 (not evaluated in report)	3:1 field composite (omit)	11/13/2015	59.2	<0.99	8.16	254	<0.5	<0.99	38.4	na	2.47	23.4	19.9	<4.82	<0.99
2	Spt composite from bin 1	11/13/2015	78.4	<0.99	6.55	259	<0.49	<0.99	34	na	<1.93	20.4	17.1	<4.82	<0.99
3	Spt composite from bin 2	11/13/2015	75	<0.99	5.67	5840	<0.5	<0.99	27.8	na	21.3	17	12.5	<4.76	<0.99
4	Spt composite from bin 3	11/13/2015	82	<0.99	5.79	176	<0.49	<0.99	50.7	na	2.46	23.6	19.9	<4.88	<0.99
Spoil Pile	From Prairie Falcon 19-1	3/31/2015	23	<0.034	3.8	140	NS	<0.10	7.2	<2	6.2	3.4	7.8	<2.5	<0.25
UMU Table (COGCC Table 910-1)				23	0.99	15,000	4 (exempt)	70	120,000	23	3,100	400	1,900	390	390
NMOCOD (Rule 19.15.17: DTW > 100 ft)															
CDPHE-HMWMO/EPA RSLs				35	3.00	22,400		96	180,000	6	4,700	600	2,200	580	580

## Notes:

exceeds UMU Table standards

exceeds EPA RSL Standards

na = not analyzed

Table 1: Summary of Analytical Results

Sample ID	Description	Date	Zinc	pH	Naphthalene	Acenaphthene	Fluorene	Anthracene	Fluoranthene	Pyrene	Benzo(A)anthracene	Chrysene
			mg/kg	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1 (not evaluated in report)	3:1 field composite (omni)	11/13/2015	120	7.57	0.217	0.0083	0.05269	<0.00768	<0.00768	<0.00768	<0.00768	<0.00768
2	5pt composite from bin 1	11/13/2015	105	8.86	0.181	<0.00835	0.0136	<0.00835	<0.00835	<0.00835	<0.00835	<0.00835
3	5pt composite from bin 2	11/13/2015	207	9.16	0.199	<0.00783	0.0154	<0.00783	<0.00783	<0.00738	<0.00783	<0.00783
4	5pt composite from bin 3	11/13/2015	85.4	9.06	0.149	<0.00672	0.00768	<0.00672	<0.00672	<0.00672	<0.00672	<0.00672
Spill Pile	From Prairie Falcon 19-1	3/31/2015	27	8.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
UMU Table (COGCC Table 910-1)			23,000	6-9	25	1,000	1,000	1,000	1,000	1,000	0.22	22
NMAOCD (Rule 19.15.17) DTW > 100 ft)												
CDPHE-HMWMD/EPA RSLs			35,000		17	4,500	3,000	23,000	3,000	2,300	2.50	290

## Notes:

exceeds UMU Table standards

exceeds EPA RSL Standards

na = not analyzed



Table 1: Summary of Analytical Results

Sample ID	Description	Date	Benzo(b)fluoranthene mg/kg	Benzo(k)fluoranthene mg/kg	Benzo(a)pyrene mg/kg	Dibenzo(a,h)anthracene mg/kg
1 (not evaluated in report)	3:1 field composite (omit)	11/13/2015	<0.00768	<0.00768	<0.00768	<0.00768
2	5qt composite from bin 1	11/13/2015	<0.00835	<0.00835	<0.00835	<0.00835
3	5qt composite from bin 2	11/13/2015	<0.00783	<0.00783	<0.00783	<0.00783
4	5qt composite from bin 3	11/13/2015	<0.00672	<0.00672	<0.00672	<0.00672
Spill Pile	From Prairie Falcon 19-1	3/31/2015	<0.020	<0.020	<0.020	<0.020
LMU Table (CDOCC Table 910-1)			0.22	2.20	0.022	0.022
NMOCB (Rule 19.15.17; DTW > 100 ft)						
CDPHE-HMWMD/EPA RSLs			2.90	29.00	0.29	0.290

## Notes:

exceeds LMU Table standards

exceeds EPA RSL Standards

na = not analyzed

Table 1: Summary of Analytical Results

Sample ID	Description	Date	Indeno[1,2,3-cd]pyrene	Sodium Absorption Ratio	Electrical Conductivity	ORP
			mg/kg	—	mmhos/cm	mV
1 (not evaluated in report)	3:1 field composite (omit)	11/13/2015	<0.00768	1.88	2.98	na
2	5pt composite from bin 1	11/13/2015	<0.00635	1.3	0.734	na
3	5pt composite from bin 2	11/13/2015	<0.00763	2	1.43	na
4	5pt composite from bin 3	11/13/2015	<0.00872	1.54	1.02	na
Spill Pile	From Prairie Falcon 19-1	3/31/2015	<0.020	5.4	1.32	82
UML Table (COGCC Table 918-1)			0.22	<12	64 or 2x background	
HMDCD (Rule 19.15.17, DTW > 100 ft)						
CDPHE-HMWMDO/EPA RSLs			2.90			

## Notes:

exceeds UML Table standards

exceeds EPA RSL Standards

na = not analyzed



Table 2: Mixing Ratio

Mixing Ratio	Sample ID	DRO (8015D)	MRO (8015D)	GRO (8015D)	TPH(EPA 8015)	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Chloride	Mercury	Arsenic	Barium
clean:cuttings		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1:1	Average of 2, 3, 4	124.00	na	54.15	203.15	0.33	0.87	0.45	1.48	52.42	0.50	4.90	1115.83
2:1	Average of 2, 3, 4	86.00	na	37.77	157.10	0.24	0.59	0.32	1.02	42.61	0.34	4.53	790.56
3:1	Average of 2, 3, 4	67.00	na	29.58	134.08	0.19	0.46	0.25	0.79	37.71	0.27	4.35	627.92
UMU Table (CDGCC Table 910-1)					500	0.17	85	100	175		23	0.39	15,000
NMOCD (Rule 19.15.17; DTW > 100 ft)					1,000	10				80,000			
CDPHE-HMWMD/EPA RSLs						5.10	4,700	25	250		35	3	22,400

Notes:

exceeds UMU Table standards

exceeds EPA RSL Standards

Table 2: Mixing Ratio

Mixing Ratio	Sample ID	Boron	Cadmium	Chromium	Chromium VI	Copper	Lead	Nickel	Selenium	Silver	Zinc	pH	Naphthalene	Acenaphthene	Fluorene
clean/cuttings		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	--	mg/kg	mg/kg	mg/kg
1:1	Average of 2, 3, 4	0.25	0.53	22.35	na	7.38	11.87	12.15	3.61	0.61	79.73	8.56	0.10	0.01	0.02
2:1	Average of 2, 3, 4	0.16	0.39	17.30	na	6.99	9.04	10.70	3.21	0.49	62.16	8.41	0.07	0.02	0.02
3:1	Average of 2, 3, 4	0.12	0.32	14.78	na	6.79	7.63	9.98	3.01	0.43	53.37	8.33	0.06	0.02	0.02
UMU Table (COGCC Table 910-1)			70	120,000	23	3,100	400	1,600	390	390	23,000	6-9	23	1,000	1,000
NMOCD (Rule 19.15.17; DTW > 100 ft)															
CDPHE-HMWMD/EPA RSLs			98	180,000	6.30	4,700	800	2,200	580	580	35,000		17	4,500	3,000

## Notes:

exceeds UMU Table standards

exceeds EPA RSL Standards



Table 2: Mixing Ratio

Mixing Ratio	Sample ID	Anthracene	Fluoranthene	Pyrene	Benzo(A)anthracene	Chrysene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene
clean cuttings		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1:1	Average of 2, 3, 4	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2:1	Average of 2, 3, 4	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
3:1	Average of 2, 3, 4	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
UMU Table (COGCC Table 910-1)		1,000	1,000	1,000	0.22	22	0.22	2.20	0.022
NMOCB (Rule 19.15.17; DTW > 100 ft)									
CDPHE-HMWMD/EPA RSLs		23,000	3,000	2,300	2.90	290	2.90	29	0.29

## Notes:

exceeds UMU Table standards

exceeds EPA RSL Standards

Table 2: Mixing Ratio

Mixing Ratio	Sample ID	Dibenzo(A,H)anthracene	Indeno(1,2,3-cd)pyrene	Sodium Absorption Ratio	Electrical Conductivity
clean cuttings		mg/kg	mg/kg	—	mmhos/cm
1:1	Average of 2, 3, 4	0.01	0.01	3.51	1.19
2:1	Average of 2, 3, 4	0.02	0.02	4.14	1.23
3:1	Average of 2, 3, 4	0.02	0.02	4.45	1.26
UMU Table (COGCC Table 910-1)		0.022	0.22	<12	<4 or 2x background
NMOCB (Rule 19.15.17; DTW > 100 ft)					
CDPHE-HMWMD/EPA RSLs		0.29	2.9		

Notes:
exceeds UMU Table standards
exceeds EPA RSL Standards



# Appendix A

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## Analytical Report

### Report Summary

Client: Bridgecreek Resources, LLC

Chain Of Custody Number:

Samples Received: 11/13/2015 3:45:00PM

Job Number: 15090-0001

Work Order: P511030

Project Name/Location: Kingsnake 34-6

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 11/24/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.





Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
1	P511030-01A	Soil	11/13/15	11/13/15	Glass Jar, 4 oz.
	P511030-01B	Soil	11/13/15	11/13/15	Glass Jar, 4 oz.
2	P511030-02A	Soil	11/13/15	11/13/15	Glass Jar, 4 oz.
	P511030-02B	Soil	11/13/15	11/13/15	Glass Jar, 4 oz.
3	P511030-03A	Soil	11/13/15	11/13/15	Glass Jar, 4 oz.
	P511030-03B	Soil	11/13/15	11/13/15	Glass Jar, 4 oz.
4	P511030-04A	Soil	11/13/15	11/13/15	Glass Jar, 4 oz.
	P511030-04B	Soil	11/13/15	11/13/15	Glass Jar, 4 oz.

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

1

**P511030-01 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	0.33	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Toluene	1.18	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Ethylbenzene	0.67	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
p,m-Xylene	1.73	0.20	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
o-Xylene	0.70	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Total Xylenes	2.43	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Total BTEX	4.61	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		104 %		50-150	1547002	11/16/15	11/17/15	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	96.2	20.0	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8015D	
Diesel Range Organics (C10-C28)	509	25.0	mg/kg	1	1547001	11/16/15	11/16/15	EPA 8015D	
Surrogate: n-Nonane		94.5 %		50-200	1547001	11/16/15	11/16/15	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		112 %		50-150	1547002	11/16/15	11/17/15	EPA 8015D	
<b>Total Metals by 6010</b>									
Arsenic	8.16	0.96	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Barium	254	9.64	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Cadmium	ND	0.96	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Chromium	38.4	4.82	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Copper	2.47	1.93	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Lead	23.4	0.96	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Mercury	ND	0.96	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Nickel	19.9	0.96	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Selenium	ND	4.82	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Silver	ND	0.96	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	
Zinc	120	1.93	mg/kg	1	1547006	11/16/15	11/17/15	EPA 6010C	

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

1

**P511030-01 (Solid)**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Cation/Anion Analysis									
pH @22.1°C	7.57		pH Units	1	1547026	11/19/15	11/20/15	EPA 9045D	
Electrical Conductivity	2390		umhos/cm	1	1547026	11/19/15	11/20/15	EPA 120.1	
Sodium Absorption Ratio	1.88		N/A	1	1547012	11/17/15	11/20/15	[CALC]	
Chloride	59.2	20.0	mg/kg	1	1547030	11/20/15	11/20/15	EPA 300.0	
Calcium	61.8	0.50	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Magnesium	3.23	0.20	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Sodium	56.0	2.00	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Boron-Hot Water Soluble by EPA 6010									
Boron	ND	0.50	mg/L	1	1547005	11/16/15	11/17/15	EPA 6010C	

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Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

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**P511030-02 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	0.49	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Toluene	1.73	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Ethylbenzene	1.05	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
p,m-Xylene	2.66	0.20	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
o-Xylene	1.11	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Total Xylenes	3.77	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Total BTEX	7.04	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		106 %		50-150	1547002	11/16/15	11/17/15	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	141	20.0	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8015D	
Diesel Range Organics (C10-C28)	106	25.0	mg/kg	1	1547001	11/16/15	11/16/15	EPA 8015D	
Surrogate: n-Nonane		97.8 %		50-200	1547001	11/16/15	11/16/15	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		114 %		50-150	1547002	11/16/15	11/17/15	EPA 8015D	
<b>Total Metals by 6010</b>									
Arsenic	6.55	0.96	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Barium	259	9.63	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Cadmium	ND	0.96	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Chromium	34.0	4.82	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Copper	ND	1.93	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Lead	20.4	0.96	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Mercury	ND	0.96	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Nickel	17.1	0.96	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Selenium	ND	4.82	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Silver	ND	0.96	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Zinc	105	1.93	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	

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405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

2

**P511030-02 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Cation/Anion Analysis</b>									
pH @21.9°C	8.86		pH Units	1	1547026	11/19/15	11/20/15	EPA 9045D	
Electrical Conductivity	734		umhos/cm	1	1547026	11/19/15	11/20/15	EPA 120.1	
Sodium Absorption Ratio	1.30		N/A	1	1547012	11/17/15	11/20/15	[CALC]	
Chloride	78.4	20.0	mg/kg	1	1547030	11/20/15	11/20/15	EPA 300.0	
Calcium	71.8	0.50	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Magnesium	4.36	0.20	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Sodium	41.8	2.00	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
<b>Boron-Hot Water Soluble by EPA 6010</b>									
Boron	ND	0.49	mg/L	1	1547005	11/16/15	11/17/15	EPA 6010C	

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Lakewood CO, 80228

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Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

3

**P511030-03 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	0.26	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Toluene	0.90	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Ethylbenzene	0.53	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
p,m-Xylene	1.31	0.20	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
o-Xylene	0.55	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Total Xylenes	1.85	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Total BTEX	3.54	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		104 %		50-150	1547002	11/16/15	11/17/15	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	66.9	20.0	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8015D	
Diesel Range Organics (C10-C28)	419	25.0	mg/kg	1	1547001	11/16/15	11/16/15	EPA 8015D	
Surrogate: n-Nonane		93.4 %		50-200	1547001	11/16/15	11/16/15	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		110 %		50-150	1547002	11/16/15	11/17/15	EPA 8015D	
<b>Total Metals by 6010</b>									
Arsenic	5.67	0.95	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Barium	5840	9.52	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Cadmium	ND	0.95	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Chromium	27.8	4.76	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Copper	21.3	1.90	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Lead	17.0	0.95	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Mercury	ND	0.95	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Nickel	12.5	0.95	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Selenium	ND	4.76	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Silver	ND	0.95	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Zinc	207	1.90	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

**Reported:**  
24-Nov-15 12:22

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**P511030-03 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Cation/Anion Analysis</b>									
pH @25°C	9.16		pH Units	1	1547026	11/19/15	11/20/15	EPA 9045D	
Electrical Conductivity	1430		umhos/cm	1	1547026	11/19/15	11/20/15	EPA 120.1	
Sodium Absorption Ratio	2.00		N/A	1	1547012	11/17/15	11/20/15	[CALC]	
Chloride	75.0	20.0	mg/kg	1	1547030	11/20/15	11/20/15	EPA 300.0	
Calcium	42.8	0.50	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Magnesium	4.05	0.20	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Sodium	51.0	2.00	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
<b>Boron-Hot Water Soluble by EPA 6010</b>									
Boron	ND	0.50	mg/L	1	1547005	11/16/15	11/17/15	EPA 6010C	

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Bridgecreek Resources, LLC  
405 Urban St Suite 400  
Lakewood CO, 80228

Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

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**P511030-04 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	1.08	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Toluene	2.42	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Ethylbenzene	0.97	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
p,m-Xylene	1.98	0.20	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
o-Xylene	0.95	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Total Xylenes	2.94	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Total BTEX	7.41	0.10	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		101 %		50-150	1547002	11/16/15	11/17/15	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	102	20.0	mg/kg	1	1547002	11/16/15	11/17/15	EPA 8015D	
Diesel Range Organics (C10-C28)	189	25.0	mg/kg	1	1547001	11/16/15	11/16/15	EPA 8015D	
Surrogate: n-Nonane		91.0 %		50-200	1547001	11/16/15	11/16/15	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		113 %		50-150	1547002	11/16/15	11/17/15	EPA 8015D	
<b>Total Metals by 6010</b>									
Arsenic	5.79	0.98	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Barium	176	9.77	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Cadmium	ND	0.98	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Chromium	50.7	4.88	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Copper	2.46	1.95	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Lead	23.6	0.98	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Mercury	ND	0.98	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Nickel	19.9	0.98	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Selenium	ND	4.88	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Silver	ND	0.98	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	
Zinc	85.4	1.95	mg/kg	1	1547006	11/17/15	11/17/15	EPA 6010C	

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Project Name: Kingsnake 34-6  
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**P511030-04 (Solid)**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Cation/Anion Analysis									
pH @25°C	9.06		pH Units	1	1547026	11/19/15	11/20/15	EPA 9045D	
Electrical Conductivity	1020		umhos/cm	1	1547026	11/19/15	11/20/15	EPA 120.1	
Sodium Absorption Ratio	1.54		N/A	1	1547012	11/17/15	11/20/15	[CALC]	
Chloride	92.1	20.0	mg/kg	1	1547030	11/20/15	11/20/15	EPA 300.0	
Calcium	49.2	0.50	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Magnesium	4.72	0.20	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Sodium	42.2	2.00	mg/L	1	1547009	11/17/15	11/19/15	EPA 6010C	
Boron-Hot Water Soluble by EPA 6010									
Boron	ND	0.49	mg/L	1	1547005	11/16/15	11/17/15	EPA 6010C	

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Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

**Volatile Organics by EPA 8021 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1547002 - Purge and Trap EPA 5030A</b>										
<b>Blank (1547002-BLK1)</b>				Prepared & Analyzed: 16-Nov-15						
Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	0.315		"	0.320		98.4	50-150			
<b>LCS (1547002-BS1)</b>				Prepared & Analyzed: 16-Nov-15						
Benzene	9.64	0.10	mg/kg	10.0		96.0	70-130			
Toluene	9.45	0.10	"	10.0		94.1	70-130			
Ethylbenzene	9.48	0.10	"	10.0		94.4	70-130			
p,m-Xylene	19.1	0.20	"	20.1		95.1	70-130			
o-Xylene	9.19	0.10	"	10.0		91.5	70-130			
Surrogate: 4-Bromochlorobenzene-PID	0.320		"	0.322		99.5	50-150			
<b>Matrix Spike (1547002-MS1)</b>				Source: P511026-01	Prepared & Analyzed: 16-Nov-15					
Benzene	10.8	0.10	mg/kg	9.93	ND	109	54.3-133			
Toluene	10.6	0.10	"	9.93	ND	106	61.4-130			
Ethylbenzene	10.6	0.10	"	9.93	ND	107	61.4-133			
p,m-Xylene	21.3	0.20	"	19.9	ND	107	63.3-131			
o-Xylene	10.2	0.10	"	9.93	ND	103	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	0.317		"	0.318		99.7	50-150			
<b>Matrix Spike Dup (1547002-MSD1)</b>				Source: P511026-01	Prepared & Analyzed: 16-Nov-15					
Benzene	10.6	0.10	mg/kg	10.0	ND	106	54.3-133	1.86	20	
Toluene	10.3	0.10	"	10.0	ND	103	61.4-130	2.09	20	
Ethylbenzene	10.3	0.10	"	10.0	ND	103	61.4-133	2.42	20	
p,m-Xylene	20.8	0.20	"	20.1	ND	104	63.3-131	2.18	20	
o-Xylene	10.0	0.10	"	10.0	ND	99.5	63.3-131	1.94	20	
Surrogate: 4-Bromochlorobenzene-PID	0.323		"	0.321		101	50-150			

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Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1547001 - DRO Extraction EPA 3550M</b>										
<b>Blank (1547001-BLK1)</b>				Prepared & Analyzed: 16-Nov-15						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Surrogate: n-Nonane	47.4		"	50.0		94.8	50-200			
<b>LCS (1547001-BS1)</b>				Prepared & Analyzed: 16-Nov-15						
Diesel Range Organics (C10-C28)	447	25.0	mg/kg	500		89.5	38-132			
Surrogate: n-Nonane	47.5		"	50.0		95.0	50-200			
<b>Matrix Spike (1547001-MS1)</b>				Source: P511028-01		Prepared & Analyzed: 16-Nov-15				
Diesel Range Organics (C10-C28)	464	25.0	mg/kg	500	ND	92.9	38-132			
Surrogate: n-Nonane	42.7		"	50.0		85.4	50-200			
<b>Matrix Spike Dup (1547001-MSD1)</b>				Source: P511028-01		Prepared & Analyzed: 16-Nov-15				
Diesel Range Organics (C10-C28)	458	25.0	mg/kg	500	ND	91.7	38-132	1.28	20	
Surrogate: n-Nonane	42.8		"	50.0		85.7	50-200			

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Project Manager: John Thompson

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24-Nov-15 12:22

### Nonhalogenated Organics by 8015 - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1547002 - Purge and Trap EPA 5030A</b>										
<b>Blank (1547002-BLK1)</b>				Prepared & Analyzed: 16-Nov-15						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	0.356		"	0.320		111	50-150			
<b>LCS (1547002-BS1)</b>				Prepared & Analyzed: 16-Nov-15						
Gasoline Range Organics (C6-C10)	117	20.1	mg/kg	113		103	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	0.363		"	0.322		113	50-150			
<b>Matrix Spike (1547002-MS1)</b>				Source: P511026-01		Prepared & Analyzed: 16-Nov-15				
Gasoline Range Organics (C6-C10)	128	19.9	mg/kg	112	ND	114	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	0.352		"	0.318		111	50-150			
<b>Matrix Spike Dup (1547002-MSD1)</b>				Source: P511026-01		Prepared & Analyzed: 16-Nov-15				
Gasoline Range Organics (C6-C10)	123	20.1	mg/kg	113	ND	109	70-130	3.54	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	0.351		"	0.321		109	50-150			

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Project Name: Kingsnake 34-6  
Project Number: 15090-0001  
Project Manager: John Thompson

Reported:  
24-Nov-15 12:22

### Total Metals by 6010 - Quality Control

### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1547006 - Metal Solid Digestion EPA 3051A

##### Blank (1547006-BLK1)

Prepared: 16-Nov-15 Analyzed: 17-Nov-15

Arsenic	ND	1.00	mg/kg
Barium	ND	10.0	"
Cadmium	ND	1.00	"
Chromium	ND	5.00	"
Copper	ND	2.00	"
Lead	ND	1.00	"
Mercury	ND	1.00	"
Nickel	ND	1.00	"
Selenium	ND	5.00	"
Silver	ND	1.00	"
Zinc	ND	2.00	"

##### LCS (1547006-BS1)

Prepared: 16-Nov-15 Analyzed: 17-Nov-15

Arsenic	26.5	1.00	mg/kg	25.0	106	80-120
Barium	570	10.0	"	500	114	80-120
Cadmium	26.8	1.00	"	25.0	107	80-120
Chromium	52.3	5.00	"	50.0	105	80-120
Copper	53.4	2.00	"	50.0	107	80-120
Lead	53.8	1.00	"	50.0	108	80-120
Mercury	11.0	1.00	"	10.0	110	80-120
Nickel	52.9	1.00	"	50.0	106	80-120
Selenium	9.96	5.00	"	10.0	99.6	80-120
Silver	10.8	1.00	"	10.0	108	80-120
Zinc	52.7	2.00	"	50.0	105	80-120

##### Matrix Spike (1547006-MS1)

Source: P511016-01

Prepared: 16-Nov-15 Analyzed: 17-Nov-15

Arsenic	25.1	0.97	mg/kg	24.2	2.20	94.8	75-125
Barium	546	9.68	"	484	60.2	100	75-125
Cadmium	24.1	0.97	"	24.2	ND	99.7	75-125
Chromium	50.0	4.84	"	48.4	ND	103	75-125
Copper	45.4	1.94	"	48.4	ND	93.8	75-125
Lead	52.2	0.97	"	48.4	4.16	99.3	75-125
Mercury	9.95	0.97	"	9.68	ND	103	75-125
Nickel	49.1	0.97	"	48.4	1.59	98.2	75-125
Selenium	8.82	4.84	"	9.68	ND	91.1	75-125
Silver	9.21	0.97	"	9.68	ND	95.2	75-125
Zinc	56.2	1.94	"	48.4	8.76	98.1	75-125

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24-Nov-15 12:22

### Total Metals by 6010 - Quality Control

### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 1547006 - Metal Solid Digestion EPA 3051A

Matrix Spike Dup (1547006-MSD1)	Source: P511016-01			Prepared: 16-Nov-15 Analyzed: 17-Nov-15						
Arsenic	25.6	0.97	mg/kg	24.3	2.20	96.3	75-125	1.69	20	
Barium	539	9.71	"	485	60.2	98.5	75-125	1.46	20	
Cadmium	24.0	0.97	"	24.3	ND	98.7	75-125	0.698	20	
Chromium	49.5	4.85	"	48.5	ND	102	75-125	1.09	20	
Copper	45.2	1.94	"	48.5	ND	93.0	75-125	0.482	20	
Lead	51.4	0.97	"	48.5	4.16	97.3	75-125	1.60	20	
Mercury	9.69	0.97	"	9.71	ND	99.8	75-125	2.65	20	
Nickel	49.0	0.97	"	48.5	1.59	97.8	75-125	0.184	20	
Selenium	9.44	4.85	"	9.71	ND	97.2	75-125	6.79	20	
Silver	8.88	0.97	"	9.71	ND	91.5	75-125	3.65	20	
Zinc	56.1	1.94	"	48.5	8.76	97.5	75-125	0.190	20	

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### Cation/Anion Analysis - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1547009 - Metal Water/TCLP (EPA 1311) Digestion EPA 3015A</b>										
<b>Blank (1547009-BLK1)</b>				Prepared: 17-Nov-15 Analyzed: 19-Nov-15						
Calcium	ND	0.50	mg/L							
Magnesium	ND	0.20	"							
Sodium	ND	2.00	"							
<b>LCS (1547009-BS1)</b>				Prepared: 17-Nov-15 Analyzed: 20-Nov-15						
Calcium	45.9	0.90	mg/L	50.0		91.7	80-120			
Magnesium	46.0	0.36	"	50.0		92.0	80-120			
Sodium	42.4	3.60	"	50.0		84.9	80-120			
<b>Matrix Spike (1547009-MS1)</b>				<b>Source: P511025-01</b>		Prepared: 17-Nov-15 Analyzed: 20-Nov-15				
Calcium	80.9		mg/L	45.0	41.4	87.8	75-125			
Magnesium	45.3		"	45.0	1.33	97.7	75-125			
Sodium	121		"	45.0	67.6	118	75-125			
<b>Matrix Spike Dup (1547009-MSD1)</b>				<b>Source: P511025-01</b>		Prepared: 17-Nov-15 Analyzed: 20-Nov-15				
Calcium	82.6		mg/L	45.0	41.4	91.6	75-125	2.10	20	
Magnesium	46.4		"	45.0	1.33	100	75-125	2.53	20	
Sodium	122		"	45.0	67.6	122	75-125	1.48	20	

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### Boron-Hot Water Soluble by EPA 6010 - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1547005 - Boron HW Soluble Digestion</b>										
<b>Blank (1547005-BLK1)</b>										
Boron	ND	0.50	mg/L							Prepared: 16-Nov-15 Analyzed: 17-Nov-15
<b>LCS (1547005-BS1)</b>										
Boron	0.50		mg/L	0.500		99.6	80-120			Prepared: 16-Nov-15 Analyzed: 20-Nov-15
<b>Duplicate (1547005-DUP1)</b>										
Boron	0.63	0.50	mg/L		0.63			0.542	20	Source: P511011-01 Prepared: 16-Nov-15 Analyzed: 17-Nov-15
<b>Matrix Spike (1547005-MS1)</b>										
Boron	1.17		mg/L	0.500	0.59	116	75-125			Source: P511011-01 Prepared: 16-Nov-15 Analyzed: 17-Nov-15

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Project Manager: John Thompson

**Reported:**  
24-Nov-15 12:22

#### Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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# ANALYTICAL REPORT

November 24, 2015



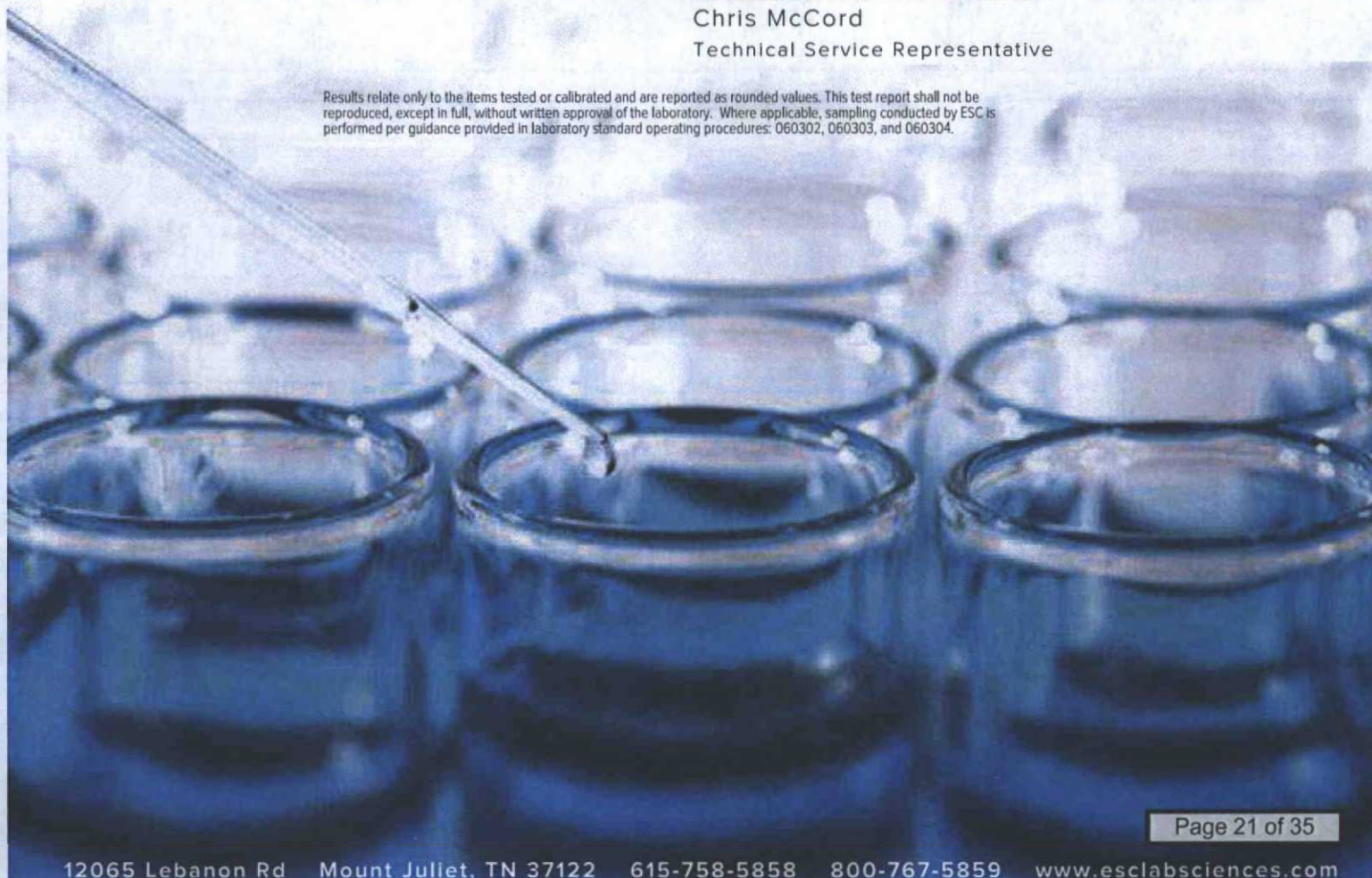
## EnviroTech- NM

Sample Delivery Group: L801817  
Samples Received: 11/18/2015  
Project Number: 15090-001  
Description: King Snake 34-6  
Site: P511030  
Report To: Tim Cain and Lynn Cook  
5796 US. Highway 64  
Farmington, NM 87401

Entire Report Reviewed By:

Chris McCord  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





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ONE LAB. NATIONWIDE.

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<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



## SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

## 1 L801817-01 Solid

Collected by  
John ThompsonCollected date/time  
11/13/15 14:01Received date/time  
11/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG830121	1	11/19/15 13:44	11/20/15 08:14	KMP
Total Solids by Method 2540 G-2011	WG830377	1	11/19/15 17:00	11/20/15 10:29	KDW

1 Cp

2 Tc

3 Ss

## 2 L801817-02 Solid

Collected by  
John ThompsonCollected date/time  
11/13/15 14:01Received date/time  
11/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG830121	1	11/19/15 13:44	11/20/15 08:35	KMP
Total Solids by Method 2540 G-2011	WG830377	1	11/19/15 17:00	11/20/15 10:30	KDW

4 Cn

5 Sr

6 Qc

## 3 L801817-03 Solid

Collected by  
John ThompsonCollected date/time  
11/13/15 14:01Received date/time  
11/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG830121	1	11/19/15 13:44	11/20/15 08:57	KMP
Total Solids by Method 2540 G-2011	WG830377	1	11/19/15 17:00	11/20/15 10:30	KDW

7 Gl

8 Al

9 Sc

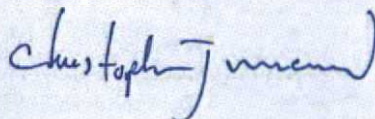
## 4 L801817-04 Solid

Collected by  
John ThompsonCollected date/time  
11/13/15 14:01Received date/time  
11/18/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG830121	1	11/19/15 13:44	11/20/15 09:18	KMP
Total Solids by Method 2540 G-2011	WG830377	1	11/19/15 17:00	11/20/15 10:30	KDW



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris McCord  
Technical Service Representative

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al<sup>9</sup> Sc



Collected date/time: 11/13/15 14:01

L801817

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.1		1	11/20/2015 10:29	WG830377

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Anthracene	ND		0.00768	1	11/20/2015 08:14	WG830121
Acenaphthene	0.00883		0.00768	1	11/20/2015 08:14	WG830121
Acenaphthylene	ND		0.00768	1	11/20/2015 08:14	WG830121
Benzo(a)anthracene	ND		0.00768	1	11/20/2015 08:14	WG830121
Benzo(a)pyrene	ND		0.00768	1	11/20/2015 08:14	WG830121
Benzo(b)fluoranthene	ND		0.00768	1	11/20/2015 08:14	WG830121
Benzo(g,h,i)perylene	ND		0.00768	1	11/20/2015 08:14	WG830121
Benzo(k)fluoranthene	ND		0.00768	1	11/20/2015 08:14	WG830121
Chrysene	ND		0.00768	1	11/20/2015 08:14	WG830121
Dibenz(a,h)anthracene	ND		0.00768	1	11/20/2015 08:14	WG830121
Fluoranthene	ND		0.00768	1	11/20/2015 08:14	WG830121
Fluorene	0.0269		0.00768	1	11/20/2015 08:14	WG830121
Indeno(1,2,3-cd)pyrene	ND		0.00768	1	11/20/2015 08:14	WG830121
Naphthalene	0.217		0.0256	1	11/20/2015 08:14	WG830121
Phenanthrene	0.0465		0.00768	1	11/20/2015 08:14	WG830121
Pyrene	ND		0.00768	1	11/20/2015 08:14	WG830121
1-Methylnaphthalene	0.232		0.0256	1	11/20/2015 08:14	WG830121
2-Methylnaphthalene	0.278		0.0256	1	11/20/2015 08:14	WG830121
2-Chloronaphthalene	ND		0.0256	1	11/20/2015 08:14	WG830121
(S) Nitrobenzene-d5	92.4		22.1-146		11/20/2015 08:14	WG830121
(S) 2-Fluorobiphenyl	90.2		40.6-122		11/20/2015 08:14	WG830121
(S) p-Terphenyl-d14	77.4		32.2-131		11/20/2015 08:14	WG830121



Collected date/time: 11/13/15 14:01

L801817

## Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	71.8		1	11/20/2015 10:30	WG830377

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00835	1	11/20/2015 08:35	WG830121
Acenaphthene	ND		0.00835	1	11/20/2015 08:35	WG830121
Acenaphthylene	ND		0.00835	1	11/20/2015 08:35	WG830121
Benzo(a)anthracene	ND		0.00835	1	11/20/2015 08:35	WG830121
Benzo(a)pyrene	ND		0.00835	1	11/20/2015 08:35	WG830121
Benzo(b)fluoranthene	ND		0.00835	1	11/20/2015 08:35	WG830121
Benzo(g,h,i)perylene	ND		0.00835	1	11/20/2015 08:35	WG830121
Benzo(k)fluoranthene	ND		0.00835	1	11/20/2015 08:35	WG830121
Chrysene	ND		0.00835	1	11/20/2015 08:35	WG830121
Dibenz(a,h)anthracene	ND		0.00835	1	11/20/2015 08:35	WG830121
Fluoranthene	ND		0.00835	1	11/20/2015 08:35	WG830121
Fluorene	0.0136		0.00835	1	11/20/2015 08:35	WG830121
Indeno(1,2,3-cd)pyrene	ND		0.00835	1	11/20/2015 08:35	WG830121
Naphthalene	0.181		0.0278	1	11/20/2015 08:35	WG830121
Phenanthrene	0.0205		0.00835	1	11/20/2015 08:35	WG830121
Pyrene	ND		0.00835	1	11/20/2015 08:35	WG830121
1-Methylnaphthalene	0.162		0.0278	1	11/20/2015 08:35	WG830121
2-Methylnaphthalene	0.196		0.0278	1	11/20/2015 08:35	WG830121
2-Chloronaphthalene	ND		0.0278	1	11/20/2015 08:35	WG830121
(S) Nitrobenzene-d5	80.4		22.1-146		11/20/2015 08:35	WG830121
(S) 2-Fluorobiphenyl	78.4		40.6-122		11/20/2015 08:35	WG830121
(S) p-Terphenyl-d14	60.7		32.2-131		11/20/2015 08:35	WG830121

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/13/15 14:01

L801817

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.6		1	11/20/2015 10:30	WG830377

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Anthracene	ND		0.00783	1	11/20/2015 08:57	WG830121
Acenaphthene	ND		0.00783	1	11/20/2015 08:57	WG830121
Acenaphthylene	ND		0.00783	1	11/20/2015 08:57	WG830121
Benzo(a)anthracene	ND		0.00783	1	11/20/2015 08:57	WG830121
Benzo(a)pyrene	ND		0.00783	1	11/20/2015 08:57	WG830121
Benzo(b)fluoranthene	ND		0.00783	1	11/20/2015 08:57	WG830121
Benzo(g,h,i)perylene	ND		0.00783	1	11/20/2015 08:57	WG830121
Benzo(k)fluoranthene	ND		0.00783	1	11/20/2015 08:57	WG830121
Chrysene	ND		0.00783	1	11/20/2015 08:57	WG830121
Dibenz(a,h)anthracene	ND		0.00783	1	11/20/2015 08:57	WG830121
Fluoranthene	ND		0.00783	1	11/20/2015 08:57	WG830121
Fluorene	0.0154		0.00783	1	11/20/2015 08:57	WG830121
Indeno(1,2,3-cd)pyrene	ND		0.00783	1	11/20/2015 08:57	WG830121
Naphthalene	0.199		0.0261	1	11/20/2015 08:57	WG830121
Phenanthrene	0.0210		0.00783	1	11/20/2015 08:57	WG830121
Pyrene	ND		0.00783	1	11/20/2015 08:57	WG830121
1-Methylnaphthalene	0.189		0.0261	1	11/20/2015 08:57	WG830121
2-Methylnaphthalene	0.233		0.0261	1	11/20/2015 08:57	WG830121
2-Chloronaphthalene	ND		0.0261	1	11/20/2015 08:57	WG830121
(S) Nitrobenzene-d5	95.5		22.1-146		11/20/2015 08:57	WG830121
(S) 2-Fluorobiphenyl	84.8		40.6-122		11/20/2015 08:57	WG830121
(S) p-Terphenyl-d14	69.8		32.2-131		11/20/2015 08:57	WG830121



Collected date/time: 11/13/15 14:01

L801817

## Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	89.3	J3	1	11/20/2015 10:30	WG830377

## Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00672	1	11/20/2015 09:18	WG830121
Acenaphthene	ND		0.00672	1	11/20/2015 09:18	WG830121
Acenaphthylene	ND		0.00672	1	11/20/2015 09:18	WG830121
Benzo(a)anthracene	ND		0.00672	1	11/20/2015 09:18	WG830121
Benzo(a)pyrene	ND		0.00672	1	11/20/2015 09:18	WG830121
Benzo(b)fluoranthene	ND		0.00672	1	11/20/2015 09:18	WG830121
Benzo(g,h,i)perylene	ND		0.00672	1	11/20/2015 09:18	WG830121
Benzo(k)fluoranthene	ND		0.00672	1	11/20/2015 09:18	WG830121
Chrysene	ND		0.00672	1	11/20/2015 09:18	WG830121
Dibenz(a,h)anthracene	ND		0.00672	1	11/20/2015 09:18	WG830121
Fluoranthene	ND		0.00672	1	11/20/2015 09:18	WG830121
Fluorene	0.00768		0.00672	1	11/20/2015 09:18	WG830121
Indeno(1,2,3-cd)pyrene	ND		0.00672	1	11/20/2015 09:18	WG830121
Naphthalene	0.149		0.0224	1	11/20/2015 09:18	WG830121
Phenanthrene	0.0129		0.00672	1	11/20/2015 09:18	WG830121
Pyrene	ND		0.00672	1	11/20/2015 09:18	WG830121
1-Methylnaphthalene	0.0777		0.0224	1	11/20/2015 09:18	WG830121
2-Methylnaphthalene	0.115		0.0224	1	11/20/2015 09:18	WG830121
2-Chloronaphthalene	ND		0.0224	1	11/20/2015 09:18	WG830121
(S) Nitrobenzene-d5	97.6		22.1-146		11/20/2015 09:18	WG830121
(S) 2-Fluorobiphenyl	92.3		40.6-122		11/20/2015 09:18	WG830121
(S) p-Terphenyl-d14	78.1		32.2-131		11/20/2015 09:18	WG830121



WG830377

Total Solids by Method 2540 G-2011

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

L801817-01,02,03,04

## Method Blank (MB)

(MB) 11/20/15 10:21

Analyte	MB Result %	MB Qualifier	MB RDL %
Total Solids	0.000700		

## L801817-04 Original Sample (OS) • Duplicate (DUP)

(OS) 11/20/15 10:30 • (DUP) 11/20/15 10:30

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	89.3	84.2	1	5.80	<u>J3</u>	5

## Laboratory Control Sample (LCS)

(LCS) 11/20/15 10:22

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Method Blank (MB)

(MB) 11/20/15 00:48

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Anthracene	ND		0.00600
Acenaphthene	ND		0.00600
Acenaphthylene	ND		0.00600
Benzo(a)anthracene	ND		0.00600
Benzo(a)pyrene	ND		0.00600
Benzo(b)fluoranthene	ND		0.00600
Benzo(g,h,i)perylene	ND		0.00600
Benzo(k)fluoranthene	ND		0.00600
Chrysene	ND		0.00600
Dibenz(a,h)anthracene	ND		0.00600
Fluoranthene	ND		0.00600
Fluorene	ND		0.00600
Indeno(1,2,3-cd)pyrene	ND		0.00600
Naphthalene	ND		0.0200
Phenanthrene	ND		0.00600
Pyrene	ND		0.00600
1-Methylnaphthalene	ND		0.0200
2-Methylnaphthalene	ND		0.0200
2-Chloronaphthalene	ND		0.0200
(S) p-Terphenyl-d14	71.7		32.2-131
(S) Nitrobenzene-d5	100		22.1-146
(S) 2-Fluorobiphenyl	94.6		40.6-122

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/19/15 23:41 • (LCSD) 11/20/15 00:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	0.0733	0.0730	91.7	91.2	50.3-130			0.500	20
Acenaphthene	0.0800	0.0735	0.0733	91.9	91.7	52.4-120			0.210	20
Acenaphthylene	0.0800	0.0726	0.0722	90.7	90.3	49.6-120			0.500	20
Benzo(a)anthracene	0.0800	0.0622	0.0628	77.7	78.5	46.7-125			1.02	20
Benzo(a)pyrene	0.0800	0.0596	0.0633	74.5	79.1	42.3-119			5.98	20
Benzo(b)fluoranthene	0.0800	0.0597	0.0613	74.6	76.6	43.6-124			2.60	20
Benzo(g,h,i)perylene	0.0800	0.0593	0.0632	74.2	79.0	45.1-132			6.39	20
Benzo(k)fluoranthene	0.0800	0.0581	0.0646	72.6	80.8	46.1-131			10.7	20



WG830121

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

L801817-01,02,03,04

## Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/19/15 23:41 • (LCSD) 11/20/15 00:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chrysene	0.0800	0.0677	0.0679	84.7	84.9	49.5-131			0.250	20
Dibenz(a,h)anthracene	0.0800	0.0610	0.0650	76.3	81.2	44.8-133			6.22	20
Fluoranthene	0.0800	0.0683	0.0680	85.3	85.0	49.3-128			0.360	20
Fluorene	0.0800	0.0712	0.0709	89.0	88.6	50.6-121			0.430	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0618	0.0657	77.2	82.2	46.1-135			6.16	20
Naphthalene	0.0800	0.0698	0.0695	87.2	86.8	49.6-115			0.430	20
Phenanthrene	0.0800	0.0682	0.0680	85.2	85.0	48.8-121			0.310	20
Pyrene	0.0800	0.0649	0.0649	81.1	81.1	44.7-130			0.0100	20
1-Methylnaphthalene	0.0800	0.0717	0.0729	89.7	91.1	50.6-122			1.65	20
2-Methylnaphthalene	0.0800	0.0718	0.0726	89.7	90.8	50.4-120			1.20	20
2-Chloronaphthalene	0.0800	0.0728	0.0726	91.0	90.7	53.9-121			0.330	20
(S) p-Terphenyl-d14				75.6	76.3	32.2-131				
(S) Nitrobenzene-d5				101	94.8	22.1-146				
(S) 2-Fluorobiphenyl				95.5	93.5	40.6-122				

## L801752-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/20/15 05:03 • (MS) 11/20/15 05:24 • (MSD) 11/20/15 05:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	0.00110	0.0693	0.0624	85.2	76.6	1	26.5-141			10.5	21.2
Acenaphthene	0.0800	ND	0.0710	0.0641	88.8	80.2	1	31.9-130			10.2	20
Acenaphthylene	0.0800	ND	0.0706	0.0651	88.2	81.3	1	33.7-129			8.12	20
Benzo(a)anthracene	0.0800	0.0132	0.0603	0.0538	58.9	50.7	1	18.3-136			11.4	24.6
Benzo(a)pyrene	0.0800	0.0136	0.0631	0.0563	61.8	53.4	1	16.9-135			11.4	25.2
Benzo(b)fluoranthene	0.0800	0.0178	0.0599	0.0538	52.6	45.1	1	10.0-134			10.7	30.9
Benzo(g,h,i)perylene	0.0800	0.00920	0.0629	0.0551	67.1	57.4	1	14.1-140			13.2	25.5
Benzo(k)fluoranthene	0.0800	0.00633	0.0652	0.0567	73.6	63.0	1	18.2-138			14.0	25.6
Chrysene	0.0800	0.0136	0.0637	0.0589	62.7	56.6	1	17.1-145			7.90	24.2
Dibenz(a,h)anthracene	0.0800	0.00200	0.0661	0.0589	80.1	71.2	1	18.5-138			11.4	24.3
Fluoranthene	0.0800	0.0278	0.0664	0.0576	48.2	37.3	1	15.4-144			14.1	27.1
Fluorene	0.0800	ND	0.0680	0.0618	85.0	77.2	1	23.5-136			9.56	20
Indeno(1,2,3-cd)pyrene	0.0800	0.00856	0.0657	0.0578	71.4	61.6	1	14.5-142			12.8	25.8
Naphthalene	0.0800	0.000623	0.0685	0.0625	84.8	77.4	1	29.2-128			9.06	20
Phenanthrene	0.0800	0.00338	0.0646	0.0577	76.6	67.9	1	20.1-134			11.4	23.6
Pyrene	0.0800	0.0236	0.0619	0.0551	47.8	39.3	1	11.0-148			11.7	26.1



WG830121

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

L801817-01,02,03,04

## L801752-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/20/15 05:03 • (MS) 11/20/15 05:24 • (MSD) 11/20/15 05:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1-Methylnaphthalene	0.0800	ND	0.0709	0.0647	88.6	80.8	1	28.4-137			9.16	20
2-Methylnaphthalene	0.0800	ND	0.0708	0.0642	88.5	80.3	1	26.6-137			9.77	20
2-Chloronaphthalene	0.0800	ND	0.0711	0.0649	88.9	81.2	1	38.6-126			9.09	20
(S) p-Terphenyl-d14					75.3	71.7		32.2-131				
(S) Nitrobenzene-d5					98.3	95.0		22.1-146				
(S) 2-Fluorobiphenyl					94.7	88.9		40.6-122				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc



**Abbreviations and Definitions**

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

**Qualifier                      Description**

J3	The associated batch QC was outside the established quality control range for precision.
----	--

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn<sup>5</sup> Sr<sup>6</sup> Qc

GI

<sup>8</sup> AI<sup>9</sup> Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

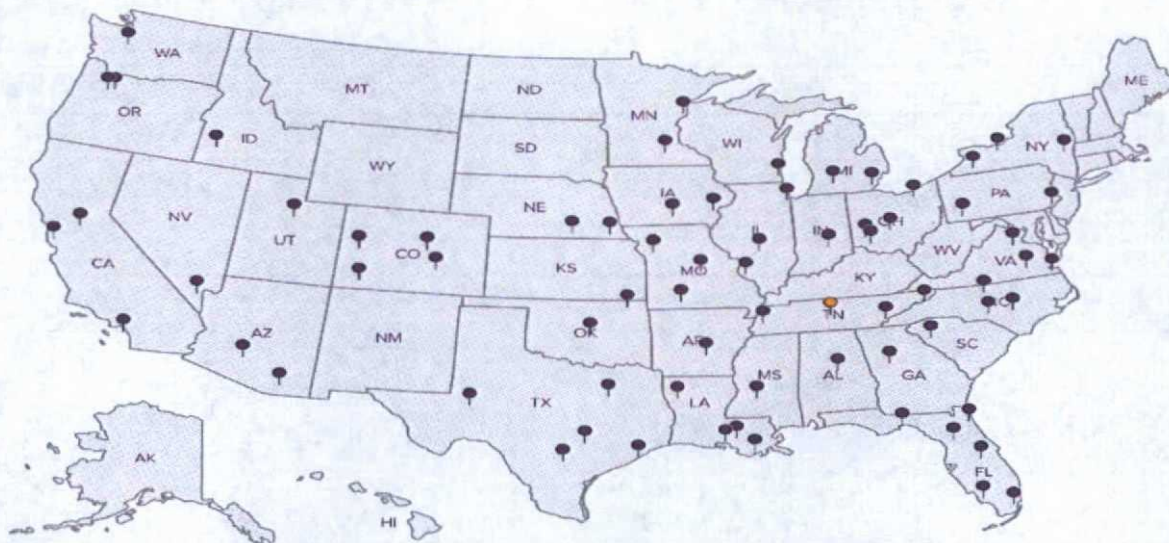
## Third Party &amp; Federal Accreditations

A2LA - ISO 17025	1461.01	AIHA	100789
A2LA - ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>na</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**





[illegible]



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0135  
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. 751141038
2. Name of Operator BRIDGECREEK RESOURCES COLO LLC Contact: CHRISTINE CAMPBELL Email: ccampbell@bridgecreekresources.com		6. If Indian, Allottee or Tribe Name UTE MOUNTAIN UTE
3a. Address 405 URBAN STREET, SUITE 400 LAKEWOOD, CO 80228	3b. Phone No. (include area code) Ph: 303-945-2642	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 34 T31N R15W SENW 2128FNL 2060FWL 36.858868 N Lat, 108.406705 W Lon		8. Well Name and No. KINGSSNAKE 34-6
		9. API Well No. 30-045-35735-00-X1
		10. Field and Pool, or Exploratory VERDE GALLUP
		11. County or Parish, and State SAN JUAN COUNTY, NM

**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other Emergency Pits or Closure
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Bridgecreek Resources (CO), LLC submits the attached final cuttings trench closure plan for the Kingsnake 34-6. (see attached report).

14. I hereby certify that the foregoing is true and correct. <b>Electronic Submission #327640 verified by the BLM Well Information System For BRIDGECREEK RESOURCES COLO LLC, sent to the Durango Committed to AFMSS for processing by BARBARA TELECKY on 01/06/2016 (16BDT0029SE)</b>	
Name (Printed/Typed) CHRISTINE CAMPBELL	Title REGULATORY LEAD
Signature (Electronic Submission)	Date 01/04/2016

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By <b>ACCEPTED</b>	DAN RABINOWITZ Title ACTING MINERALS STAFF CHIEF	Date 01/07/2016
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office Durango

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***





Adkins Consulting, Inc.  
180 E. 12<sup>th</sup> Street, Suite #5 Durango, CO 81303  
(505)793-1140

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December 30, 2015

Mr. Ryan Joyner  
Bureau of Land Management  
Tres Rios Field Office  
Land and Minerals  
15 Burnett Court  
Durango, CO 81301

RE: Cutting Trench Closure Report. Bridgecreek Resources. Kingsnake 34-6. Sec. 34, T31N.R15W.  
Lease #751-14-1038.

Mr. Joyner:

On the behalf of Bridgecreek Resources (Bridgecreek), Adkins Consulting Inc. (ACI) is pleased to submit this closure plan report. Closure occurred from December 16 through December 22, 2015. Photographs of the closure are located in Appendix A. Exhibit 1 shows the location of the cuttings trench in relation to the Kingsnake 34-6 wellhead.

Arriving on location (December 16<sup>th</sup>) and prior to commencement of cuttings trench excavation, Weeminuche Construction, Walsh Engineering, and Adkins Consulting determined that the approved cuttings trench was not sized to accommodate a 3 (clean):1 (cuttings) mixing ratio. Mr. Ryan Joyner was immediately notified via voicemail that a change in cuttings trench size is required. Verbal confirmation to proceed with the excavation was received later in the day, prior to excavation of the cuttings trench.

The dimensions of the cuttings trench changed from the original size as presented in the APD and SUPO. The northwest corner of the cuttings trench is 211 feet bearing 110 deg. magnetic north (MN) [101 deg. true north (TN)] from the Kingsnake 34-6 wellhead. The cuttings trench measures 61 ft (L) x 35 ft (W) x 12 ft (D). Including the 4-foot topsoil cap, the total depth of the trench is 16 ft.

The drill cuttings were mixed in the steel bins in a ratio of 3 (clean): 1 (cuttings). Stabilization occurred at a ratio of 1:1.

A confirmation sample of the mixed drill cuttings was obtained after the mixed drill cuttings were placed in the cuttings trench. The confirmation sample was obtained from a six point composite representating the buried drill cuttings matrix. The matrix of the buried cuttings was approximately 1/3 rock, 1/3 fines, and 1/3 stabilized drill cuttings.



The confirmation sample was delivered to Envirotech Environmental Laboratory for the analysis of constituents listed in the UMU Table and chloride. Analytical results are pending. Bridgecreek will submit analytical results via Sundry when the results become available.

If you have any questions or comments please contact me at 970-570-9535.



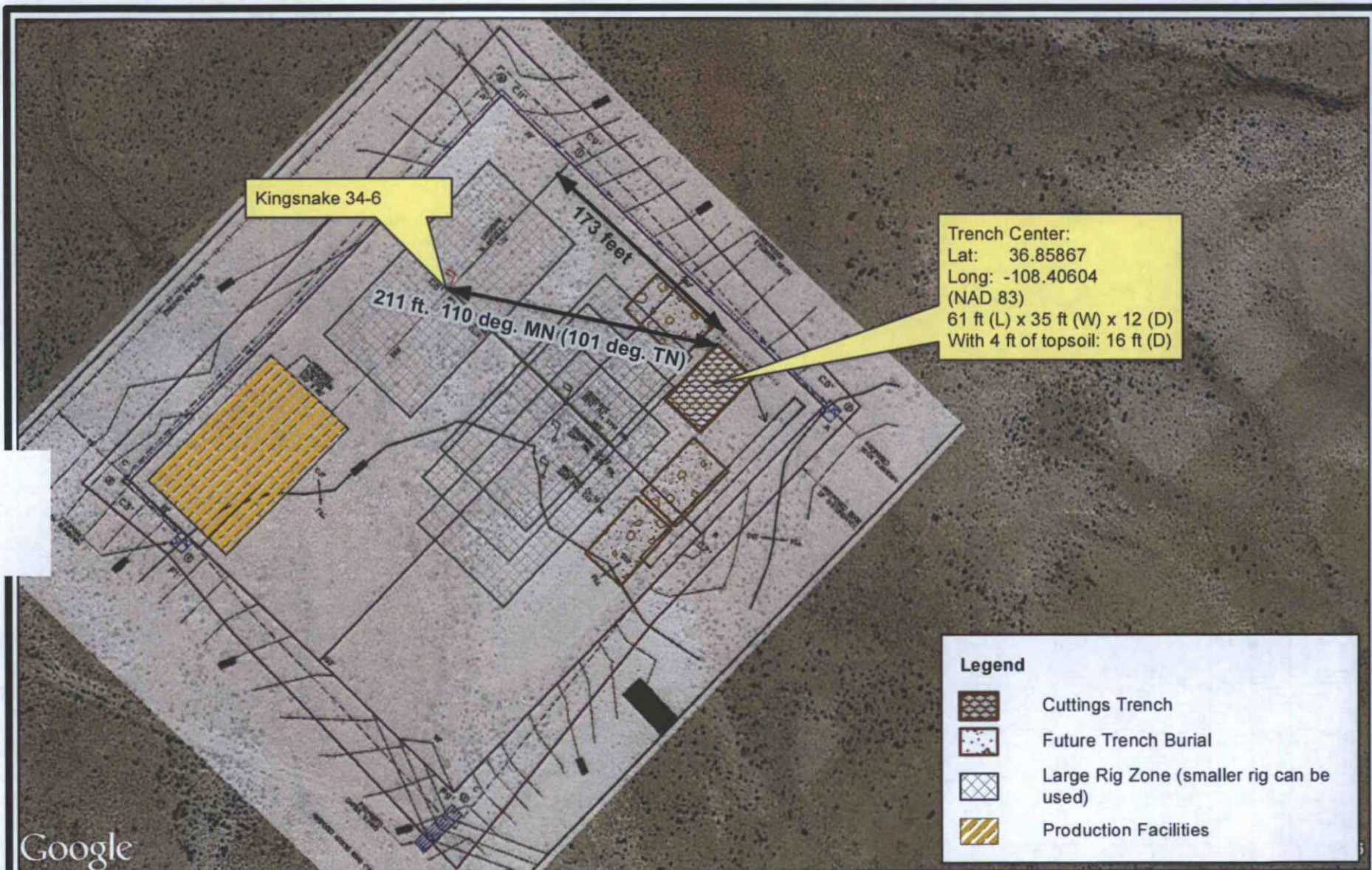
Andrew Parker  
Adkins Consulting, Inc  
Durango, CO  
970-570-9535  
andrew@adkinsenvironmental.com

Cc: Christine Campbell, Bridgecreek Resources

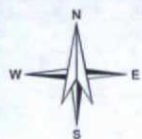
# Exhibits

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Google



0 50 100  
Feet



**Adkins Consulting Inc.**  
 180 East 12th Street  
 Durango, CO 81303  
 505-793-1140

Cuttings Trench  
 Existing and Future  
 Bridgecreek Resources  
 Kingsnake 34-6

Exhibit 1

December  
 2015



# Appendix A





Figure 1: Excavating the cuttings trench.

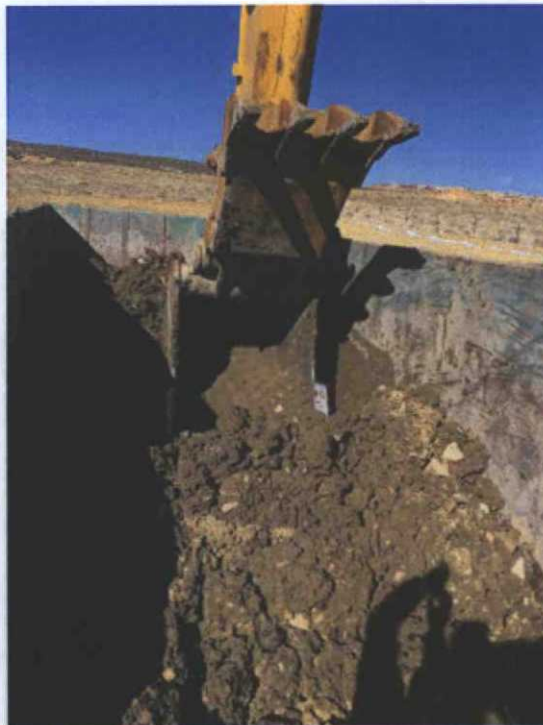


Figure 2: Mixing the drill cuttings with clean soil from trench excavation. Stabilization was achieved at a ratio of 1 (clean): 1 (cuttings).

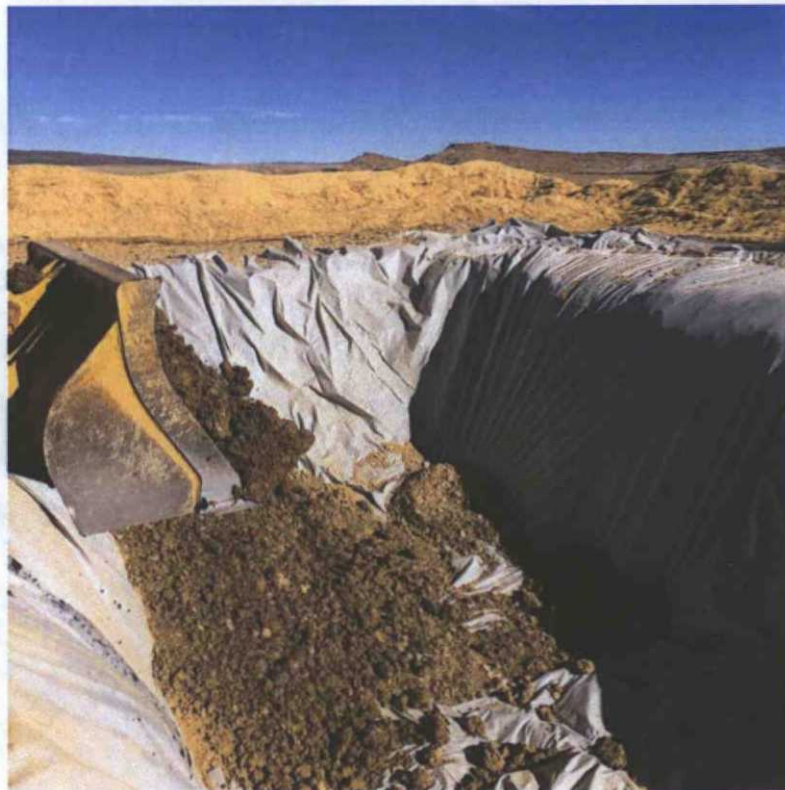


Figure 3: Placing the 3(clean):1(cuttings) mixed drill cuttings into the cuttings trench. The trench is lined with a 20-mil string reinforced LLDPE liner.



Figure 4: Spreading the mixed cuttings in the burial trench.





Figure 5: Mixed (3:1) drill cuttings. The soil matrix is approximately 1/3 rock, 1/3 fines, and 1/3 stabilized cuttings.



Figure 6: Bedrock from the excavation spoils that make up a portion of the buried cuttings matrix.

Bridgescreek Resources (Colorado) LLC  
Kingsnake 34-6  
API: 30-045-35735  
NMOCD Pit Permit: 13257

---

Enclosures

OIL CONS. DIV DIST. 3

FEB 16 2016

1. C-144 Closure Form
2. Temporary Pit Closure Report
  - a. Disposal Facility
  - b. Revegetation Rates and Technique-BIA Seed Mix for UMU Indian Reservation
  - c. Reclamation Plan
  - d. Well Sign photo

Exhibits: Plot Plan

Tables: Summary of Pre-burial Sample Analytical

Appendix A: Pre-burial sampling Analytical Results

Confirmation Sampling Analytical Results, Surface Owner Closure notification via Form 3160-5,  
Accepted 1/22/16 (Site Photos Attached)



Snake Creek Resources Co. LLC  
Lease UMU 75041038.  
Kingsnake 34-6  
161T, S34-T31N R15W  
Onsite Burial Location Marker



King snake

