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
14000 Proposed Alternative Method Permit or Closure Plan Application

OIL CONS. DIV DIST. 3

FEB 16 2016

Type of action:
- ☐ Below grade tank registration
- ☐ Permit of a pit or proposed alternative method
- 45-35736 ☐ 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

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: Osprey 30-7
API Number: 30-045-35736 OCD Permit Number: 13257
U/L or Qtr/Qtr G Section 30 Township 31 Range 14W County: San Juan
Center of Proposed Design: Latitude 36.8738941 Longitude 108.3482140 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 90ft x W 30ft x D 14ft

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

105

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 an 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_2S, 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	☐ Yes ☐ No ☐ 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	☐ Yes ☐ No ☐ 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	☐ Yes ☐ No ☐ 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	☐ 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 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	☐ Yes ☐ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ 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
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	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - 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. - FEMA map	☐ Yes ☐ 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: Christine Campbell Date: 2/9/16

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: [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:** 1-18-16

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 36.8741962 Longitude 108.3479046 NAD: ☐ 1927 ☒ 1983

22.

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 Campbell Title: Regulatory Lead

Signature: Christine Campbell Date: 2/9/16

e-mail address: ccampbell@palomarnr.com Telephone: 303-945-2630

22.

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 Campbell Title: Regulatory Lead

Signature: Christine Campbell Date: 2/9/16

e-mail address: ccampbell@palomarnr.com Telephone: 303-945-2630

Bridgecreek Resources (Colorado) LLC
Temporary Pit Closure Plan

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 the Osprey 30-7 Bridgecreek location. All proper documentation regarding closure activities in 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 Bridgecreek's proposed closure plan using a means that provides proof of notice i.e., certified mail, return receipt requested.
    a. **Closure plan with initial cuttings analysis was submitted and approved by BLM on 1/11/16 (Report Attached). Certified mail is not required for Federal land per BLM/OCD MOU. (Report Attached)**

3. Within 6 months of the Rig-off status occurring Bridgecreek will ensure that temporary pits are closed. Re-contouring and reseeding will occur during interim reclamation.
    a. **Closure occurred from January 13 to January 18, 2016. Bridgecreek 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 telephone on 1/10/16 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 stabilization 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. **A six-point composite sample was taken. Constituents listed in the UMU Table/COGCC Table are below standards and below NMOCD limits. The cuttings passed the paint filter liquids test. The burial was approved by the BLM and the UMU Tribe Environmental Department. (Sample results are attached).**

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 five-point composite sample was taken. Constituents listed in the UMU Table/COGCC Table are below standards and also below NMOCD limits. The burial was approved by the BLM and the UMU Tribe Environmental Department. (Sample results are attached).**

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 January 13 to January 18, 2016. 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 and 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.**

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 3.63 acres, but will be reduced after interim reclamation (following drilling and completion) to approximately 2.67 acre (+/-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.

D. For cut and fill slopes, initial seedbed preparation will consist of backfilling and re-contouring to achieve a configuration as close to pre-disturbance conditions as possible. 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. 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. Following final contouring, the backfilled or ripped surfaces will be covered evenly with stockpiled topsoil. Final seedbed preparation will consist or raking or harrowing the spread topsoil prior to seeding to promote a firm (but not compacted) seedbed without surface crusting. Seedbed preparation may not be necessary for topsoil storage piles

or other areas of temporary seeding. 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.

E. 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.

F. 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.

G. Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.

H. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

I. 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

J. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.

K. All surfacing material will be removed and returned to the original source pit or recycled to repair or build roads and well pads.

L. 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.

M. Upon final reclamation after cessation of production operations, all compacted areas and areas devoid of vegetation on location shall be ripped (along the contour) to a minimum of 6 inches in depth before the re-spread of topsoil and subsequent reseeding according to the BIA approved seed mix. The access road will be shaped to conform to the natural terrain and left as rough as possible to deter vehicle travel. 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.

N. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BIA seed mixture, free of noxious weeds. Inspection of the project area for noxious or invasive weeds listed by New Mexico Department of Agriculture as Class A or Class B will occur after earthwork and seeding activities. Should listed weeds be documented, the Operator will follow BLM-Tres Rios Field Office or Ute Mountain Ute Tribe, and BIA-Ute Mountain Ute Agency requirements and instructions for weed treatments, including the period of treatment, approved herbicides that may be used, required documentation to be submitted to the BLM after treatment, and any other site-specific instructions that may be applicable. The Operator will manage weeds at the proposed site with the following general practices:

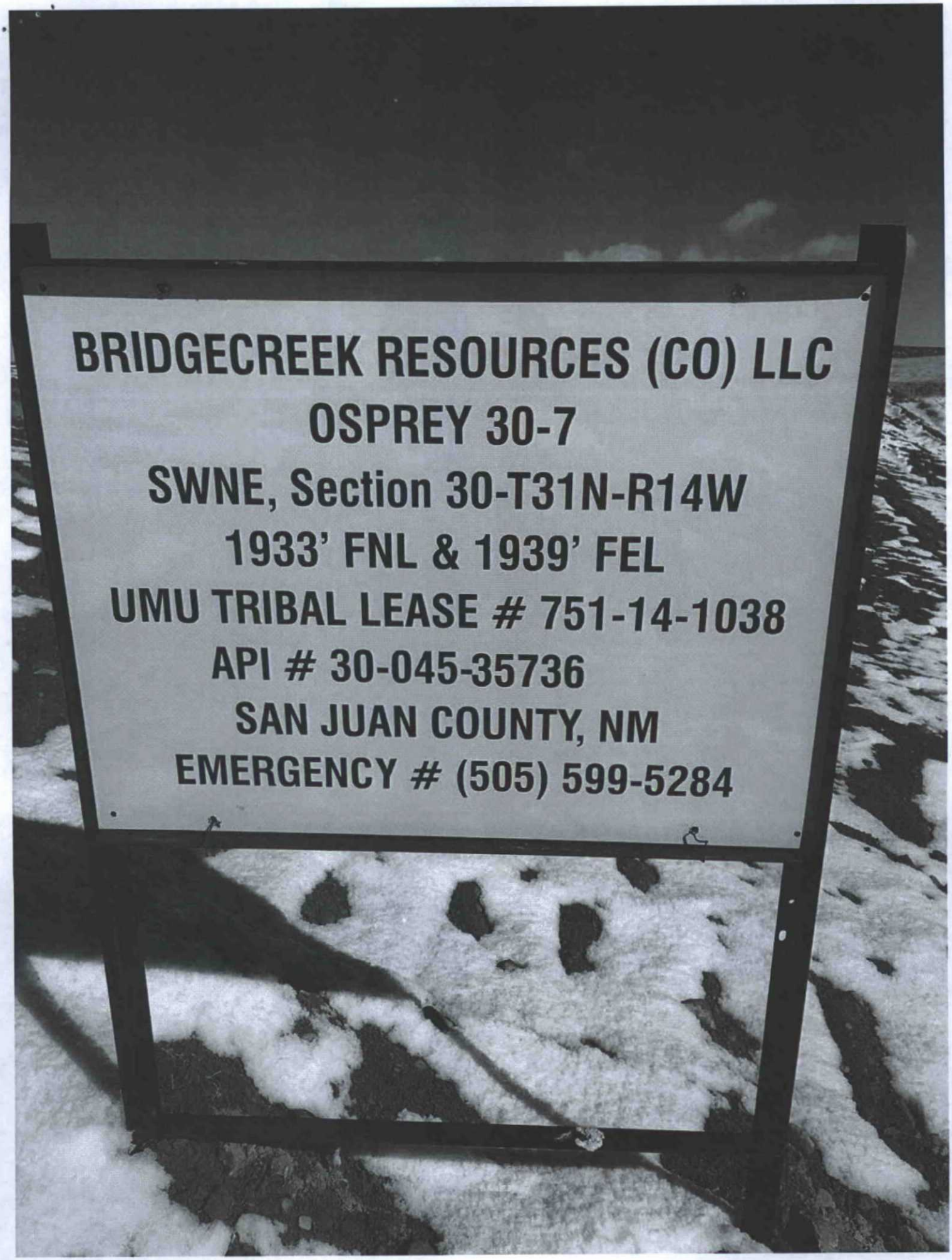
- Any "listed" weeds will be treated prior to commencement of construction to prevent incorporation into the soil.
- Equipment will be inspected and cleaned prior to entering the construction site, and earthmoving equipment will be cleaned prior to exiting the site.
- Potential weed introduction will be minimized by using only weed-free seed mix, straw, mulch or other materials that may be brought to the site.
- Ongoing weed inspection and appropriate treatment will continue until percentage cover standards have been attained and final abandonment has occurred.

O. 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.

P. Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.

Q. All unused equipment and structures including pipelines, tanks, etc. that serviced the well will be removed for proper disposal.

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


BRIDGECREEK RESOURCES (CO) LLC
OSPREY 30-7
SWNE, Section 30-T31N-R14W
1933' FNL & 1939' FEL
UMU TRIBAL LEASE # 751-14-1038
API # 30-045-35736
SAN JUAN COUNTY, NM
EMERGENCY # (505) 599-5284

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM 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.

5. Lease Serial No.
751141038

6. If Indian, Allottee or Tribe Name
UTE MOUNTAIN UTE

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
OSPREY 30-7

2. Name of Operator
BRIDGECREEK RESOURCES COLO LLC
Contact: CHRISTINE CAMPBELL
E-Mail: ccampbell@palomarnr.com

9. API Well No.
30-045-35736-00-S1

3a. Address
405 URBAN STREET, SUITE 400
LAKEWOOD, CO 80228

3b. Phone No. (include area code)
Ph: 303-945-2642

10. Field and Pool, or Exploratory
VERDE GALLUP

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 30 T31N R14W SWNE 1933FNL 1939FEL
36.873895 N Lat, 108.348216 W Lon

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			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Emergency Pits or Closure
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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 recompletion 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 (Colorado), LLC submits the attached final closure plan for the Osprey 30-7 cuttings trench.

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #329876 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 01/28/2016 (16BDT0033SE)

Name *(Printed/Typed)* CHRISTINE CAMPBELL — Title REGULATORY LEAD

Signature (Electronic Submission) — Date 01/27/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ACCEPTED — Title DAN RABINOWITZ ACTING MINERALS STAFF CHIEF — Date 01/29/2016

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. 12th Street, Suite #5 Durango, CO 81303
(505)793-1140

January 26, 2016

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. Osprey 30-7. Sec. 30, T31N.R14W. 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 January 13 through January 18, 2016. Photographs of the closure are located in Appendix A. Exhibit 1 shows the location of the cuttings trench in relation to the Osprey 30-7 wellhead.

As shown on Exhibit 1, the northwest corner of the cuttings trench is 197 feet bearing 51.6 deg. magnetic north (MN) [42 deg. true north (TN)] from the Osprey 30-7 wellhead. The cuttings trench measures 90 ft (L) x 30 ft (W) x 10 ft (D). Including the 4-foot topsoil cap, the total depth of the trench is 14 ft.

The drill cuttings were mixed in the steel bins and within the cuttings trench in a ratio of 3 (clean): 1 (cuttings). Stablization 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 5% rock, 55% fines, and 40% stablized drill cuttings.

The confirmation sample was delivered to Envirotech Environmental Laboratory for the analysis of constituents listed in the UMU Table and chloride. Appendix B contains the Certificate of Analysis for the confirmation sample of mixed buried cuttings. Constituents listed in the UMU Table are below standards except for arsenic. Arsenic was discussed in the closure plan and is not evaluated further.

The extent of the burial trench was identified with a T-post in each corner. A permenant center marker will be placed according to the SUPO to identify the center of the burial trench and the trench dimensions.

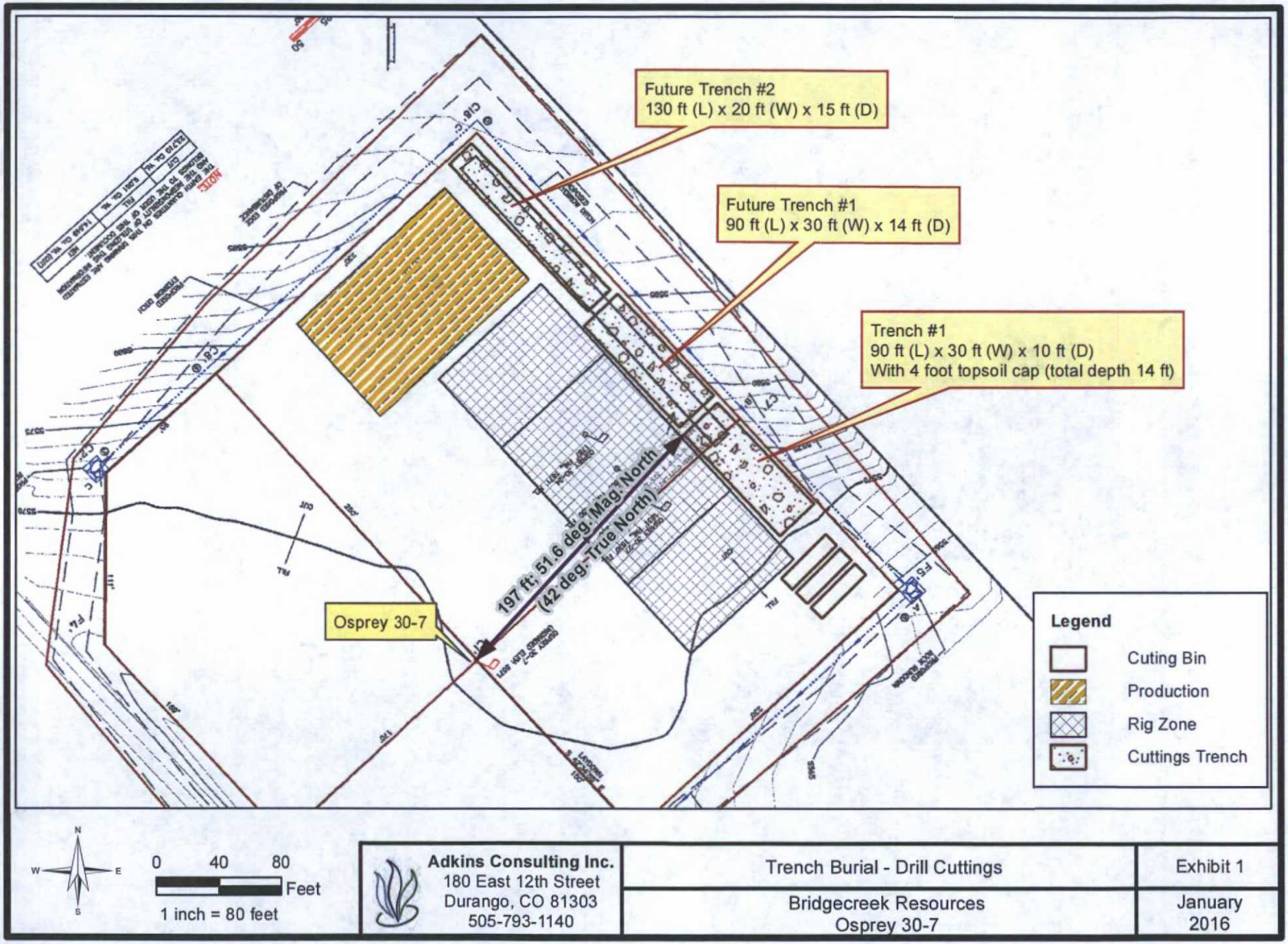
If you have any questions or comments please contact me at 970-570-9535.

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

Cc: Christine Campbell, Bridgecreek Resources

Exhibits

Appendix A



Adkins Consulting Inc. 180 East 12th Street Durango, CO 81303 505-793-1140	Trench Burial - Drill Cuttings	Exhibit 1
	Bridgecreek Resources Osprey 30-7	January 2016

Figure 1: Mixing the cuttings in the lined burial trench.

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

Figure 3: Final mixed cutting in cuttings trench. The trench is lined with a 20-mil string reinforced LLDPE liner.

Figure 4: Mixed cutting ratio. 45% stabilized cuttings, 50% fines, 5% rock.

Figure 5: Stablized cuttings "burrito wrapped" prior to placement of 4 feet soil cap.

Figure 6: T-posts mark the corners of the cuttings trench. Surface is graded level.

Appendix B

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Bridgecreek Resources, LLC
Chain Of Custody Number:
Samples Received: 1/18/2016 4:20:00PM
Job Number: 15090-0001
Work Order: P601017
Project Name/Location: Osprey 30-7

Entire Report Reviewed By: _____ Date: 1/26/16

Tim Cain, Laboratory Manager

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879
envirotech-inc.com
laboratory@envirotech-inc.com

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Confirmation Sample	P601017-01A	Soil	01/18/16	01/18/16	Glass Jar, 4 oz.
	P601017-01B	Soil	01/18/16	01/18/16	Glass Jar, 4 oz.
	P601017-01C	Soil	01/18/16	01/18/16	Glass Jar, 4 oz.
	P601017-01D	Soil	01/18/16	01/18/16	Glass Jar, 4 oz.

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

Confirmation Sample

P601017-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1604007	01/19/16	01/20/16	EPA 8021B	
Toluene	**0.20**	0.10	mg/kg	1	1604007	01/19/16	01/20/16	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1604007	01/19/16	01/20/16	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1604007	01/19/16	01/20/16	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1604007	01/19/16	01/20/16	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1604007	01/19/16	01/20/16	EPA 8021B	
Total BTEX	**0.20**	0.10	mg/kg	1	1604007	01/19/16	01/20/16	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*114 %*		*50-150*	*1604007*	*01/19/16*	*01/20/16*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1604007	01/19/16	01/20/16	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1604017	01/21/16	01/21/16	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1604017	01/21/16	01/21/16	EPA 8015D	
Surrogate: n-Nonane		*114 %*		*50-200*	*1604017*	*01/21/16*	*01/21/16*	*EPA 8015D*	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*94.9 %*		*50-150*	*1604007*	*01/19/16*	*01/20/16*	*EPA 8015D*	
Total Metals by 6010									
Arsenic	**5.76**	1.01	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Barium	**291**	10.1	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Cadmium	ND	1.01	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Chromium	**22.1**	5.03	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Copper	**5.85**	2.01	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Lead	**19.8**	1.01	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Mercury	ND	1.01	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Nickel	**10.5**	1.01	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Selenium	ND	5.03	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Silver	ND	1.01	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	
Zinc	**60.0**	2.01	mg/kg	1	1604020	01/21/16	01/22/16	EPA 6010C	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

Confirmation Sample
P601017-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
pH @25°C	**8.13**		pH Units	1	1604006	01/19/16 10:31	01/19/16 11:56	9040C/4500 H	
Electrical Conductivity	**5260**		umhos/cm	1	1604006	01/19/16 10:31	01/19/16 11:56	9050A/2510	
Sodium Absorption Ratio	**3.51**		N/A	1	1604013	01/20/16	01/20/16	[CALC]	
Chloride	**202**	20.0	mg/kg	1	1604009	01/19/16	01/19/16	EPA 300.0	
Calcium	**13.7**	0.50	mg/L	1	1604004	01/19/16	01/19/16	EPA 6010C	
Magnesium	**9.42**	0.20	mg/L	1	1604004	01/19/16	01/19/16	EPA 6010C	
Sodium	**69.0**	2.00	mg/L	1	1604004	01/19/16	01/19/16	EPA 6010C	
Boron-Hot Water Soluble by EPA 6010									
Boron	ND	0.49	mg/L	1	1604015	01/20/16	01/22/16	EPA 6010C	

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

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
Batch 1604007 - Purge and Trap EPA 5030A										
Blank (1604007-BLK1)				Prepared & Analyzed: 19-Jan-16						
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	*0.365*		"	*0.320*		*114*	*50-150*			
LCS (1604007-BS1)				Prepared & Analyzed: 19-Jan-16						
Benzene	11.8	0.10	mg/kg	10.0		118	70-130			
Toluene	11.8	0.10	"	10.0		118	70-130			
Ethylbenzene	11.9	0.10	"	10.0		120	70-130			
p,m-Xylene	24.0	0.20	"	20.0		120	70-130			
o-Xylene	11.6	0.10	"	10.0		116	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*0.361*		"	*0.320*		*113*	*50-150*			
Matrix Spike (1604007-MS1)	**Source: P601018-01**			Prepared & Analyzed: 19-Jan-16						
Benzene	12.0	0.10	mg/kg	10.0	ND	120	54.3-133			
Toluene	12.2	0.10	"	10.0	ND	122	61.4-130			
Ethylbenzene	12.3	0.10	"	10.0	ND	123	61.4-133			
p,m-Xylene	24.5	0.20	"	20.0	ND	123	63.3-131			
o-Xylene	11.8	0.10	"	10.0	ND	118	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*0.361*		"	*0.320*		*113*	*50-150*			
Matrix Spike Dup (1604007-MSD1)	**Source: P601018-01**			Prepared & Analyzed: 19-Jan-16						
Benzene	11.1	0.10	mg/kg	10.0	ND	111	54.3-133	7.78	20	
Toluene	11.2	0.10	"	10.0	ND	112	61.4-130	8.86	20	
Ethylbenzene	11.3	0.10	"	10.0	ND	113	61.4-133	8.67	20	
p,m-Xylene	22.8	0.20	"	20.0	ND	114	63.3-131	7.24	20	
o-Xylene	11.1	0.10	"	10.0	ND	111	63.3-131	6.69	20	
Surrogate: 4-Bromochlorobenzene-PID	*0.360*		"	*0.320*		*113*	*50-150*			

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

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
Batch 1604007 - Purge and Trap EPA 5030A										
Blank (1604007-BLK1)				Prepared & Analyzed: 19-Jan-16						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*0.306*		"	*0.320*		*95.7*	*50-150*			
LCS (1604007-BS1)				Prepared & Analyzed: 19-Jan-16						
Gasoline Range Organics (C6-C10)	123	20.0	mg/kg	113		109	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*0.305*		"	*0.320*		*95.2*	*50-150*			
Matrix Spike (1604007-MS1)	**Source: P601018-01**			Prepared & Analyzed: 19-Jan-16						
Gasoline Range Organics (C6-C10)	125	20.0	mg/kg	113	ND	111	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*0.302*		"	*0.320*		*94.5*	*50-150*			
Matrix Spike Dup (1604007-MSD1)	**Source: P601018-01**			Prepared & Analyzed: 19-Jan-16						
Gasoline Range Organics (C6-C10)	117	20.0	mg/kg	113	ND	104	70-130	6.20	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*0.306*		"	*0.320*		*95.6*	*50-150*			

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

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
Batch 1604017 - DRO Extraction EPA 3550M										
Blank (1604017-BLK1)				Prepared & Analyzed: 21-Jan-16						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Surrogate: n-Nonane	*63.3*		"	*50.0*		*127*	*50-200*			
LCS (1604017-BS1)				Prepared & Analyzed: 21-Jan-16						
Diesel Range Organics (C10-C28)	618	25.0	mg/kg	500		124	38-132			
Surrogate: n-Nonane	*65.4*		"	*50.0*		*131*	*50-200*			
Matrix Spike (1604017-MS1)	**Source: P601018-01**			Prepared & Analyzed: 21-Jan-16						
Diesel Range Organics (C10-C28)	1340	25.0	mg/kg	500	773	113	38-132			
Surrogate: n-Nonane	*57.7*		"	*50.0*		*115*	*50-200*			
Matrix Spike Dup (1604017-MSD1)	**Source: P601018-01**			Prepared & Analyzed: 21-Jan-16						
Diesel Range Organics (C10-C28)	1260	25.0	mg/kg	500	773	98.0	38-132	5.68	20	
Surrogate: n-Nonane	*57.9*		"	*50.0*		*116*	*50-200*			

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

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 1604020 - Metal Solid Digestion EPA 3051A										
Blank (1604020-BLK1)				Prepared: 21-Jan-16 Analyzed: 22-Jan-16						
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 (1604020-BS1)				Prepared: 21-Jan-16 Analyzed: 22-Jan-16						
Arsenic	93.8	1.00	mg/kg	100		93.8	80-120			
Barium	101	10.0	"	100		101	80-120			
Cadmium	96.3	1.00	"	100		96.3	80-120			
Chromium	98.3	5.00	"	100		98.3	80-120			
Copper	89.9	2.00	"	100		89.9	80-120			
Lead	96.9	1.00	"	100		96.9	80-120			
Mercury	100	1.00	"	100		100	80-120			
Nickel	95.4	1.00	"	100		95.4	80-120			
Selenium	90.8	5.00	"	100		90.8	80-120			
Silver	93.4	1.00	"	100		93.4	80-120			
Zinc	95.4	2.00	"	100		95.4	80-120			
Matrix Spike (1604020-MS1)	**Source: P601021-02**			Prepared: 21-Jan-16 Analyzed: 22-Jan-16						
Arsenic	99.4	0.98	mg/kg	98.0	2.80	98.5	75-125			
Barium	268	9.80	"	98.0	258	10.3	75-125			SPK1
Cadmium	97.5	0.98	"	98.0	ND	99.4	75-125			
Chromium	109	4.90	"	98.0	9.64	101	75-125			
Copper	93.3	1.96	"	98.0	ND	95.2	75-125			
Lead	106	0.98	"	98.0	9.49	98.9	75-125			
Mercury	105	0.98	"	98.0	1.01	106	75-125			
Nickel	101	0.98	"	98.0	4.05	98.7	75-125			
Selenium	92.9	4.90	"	98.0	ND	94.8	75-125			
Silver	58.8	0.98	"	98.0	ND	60.0	75-125			SPK1
Zinc	124	1.96	"	98.0	24.9	101	75-125			

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

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 1604020 - Metal Solid Digestion EPA 3051A										
Matrix Spike Dup (1604020-MSD1)	**Source: P601021-02**			Prepared: 21-Jan-16 Analyzed: 22-Jan-16						
Arsenic	97.4	1.00	mg/kg	100	2.80	94.3	75-125	2.00	20	
Barium	249	10.0	"	100	258	NR	75-125	7.37	20	SPK1
Cadmium	96.5	1.00	"	100	ND	96.1	75-125	1.01	20	
Chromium	110	5.02	"	100	9.64	100	75-125	1.20	20	
Copper	91.6	2.01	"	100	ND	91.2	75-125	1.92	20	
Lead	102	1.00	"	100	9.49	92.5	75-125	3.89	20	
Mercury	102	1.00	"	100	1.01	101	75-125	2.13	20	
Nickel	98.6	1.00	"	100	4.05	94.2	75-125	2.20	20	
Selenium	91.2	5.02	"	100	ND	90.8	75-125	1.91	20	
Silver	55.9	1.00	"	100	ND	55.7	75-125	4.97	20	SPK1
Zinc	116	2.01	"	100	24.9	90.4	75-125	6.66	20	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1604004 - Metal Water Digestion EPA 3015A										
Blank (1604004-BLK1)				Prepared: 18-Jan-16 Analyzed: 19-Jan-16						
Calcium	ND	0.50	mg/L							
Magnesium	ND	0.20	"							
Sodium	ND	2.00	"							
LCS (1604004-BS1)				Prepared: 18-Jan-16 Analyzed: 19-Jan-16						
Calcium	98.0	0.50	mg/L	100		98.0	80-120			
Magnesium	92.6	0.20	"	100		92.6	80-120			
Sodium	99.0	2.00	"	100		99.0	80-120			
Matrix Spike (1604004-MS1)	**Source: P601011-07**			Prepared: 18-Jan-16 Analyzed: 19-Jan-16						
Calcium	111	0.50	mg/L	100	9.64	101	75-125			
Magnesium	96.0	0.20	"	100	0.66	95.3	75-125			
Sodium	261	2.00	"	100	169	92.2	75-125			
Matrix Spike Dup (1604004-MSD1)	**Source: P601011-07**			Prepared: 18-Jan-16 Analyzed: 19-Jan-16						
Calcium	107	0.50	mg/L	100	9.64	97.1	75-125	3.79	20	
Magnesium	93.0	0.20	"	100	0.66	92.3	75-125	3.21	20	
Sodium	258	2.00	"	100	169	89.8	75-125	0.942	20	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1604009 - Anion Extraction EPA 300.0										
Blank (1604009-BLK1)				Prepared & Analyzed: 19-Jan-16						
Chloride	ND	20.0	mg/kg							
LCS (1604009-BS1)				Prepared & Analyzed: 19-Jan-16						
Chloride	485	20.0	mg/kg	500		96.9	90-110			
Matrix Spike (1604009-MS1)	**Source: P601013-01**			Prepared & Analyzed: 19-Jan-16						
Chloride	552	20.0	mg/kg	500	60.4	98.3	80-120			
Matrix Spike Dup (1604009-MSD1)	**Source: P601013-01**			Prepared & Analyzed: 19-Jan-16						
Chloride	559	20.0	mg/kg	500	60.4	99.7	80-120	1.21	20	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

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
Batch 1604015 - Boron HW Soluble Digestion										
Blank (1604015-BLK1)				Prepared: 20-Jan-16 Analyzed: 22-Jan-16						
Boron	ND	0.50	mg/L							
LCS (1604015-BS1)				Prepared: 20-Jan-16 Analyzed: 22-Jan-16						
Boron	3.94		mg/L	4.00		98.6	80-120			
Matrix Spike (1604015-MS1)	**Source: P601017-01**			Prepared: 20-Jan-16 Analyzed: 22-Jan-16						
Boron	3.24		mg/L	4.00	0.24	74.8	75-125			SPK1
Matrix Spike Dup (1604015-MSD1)	**Source: P601017-01**			Prepared: 20-Jan-16 Analyzed: 22-Jan-16						
Boron	3.31		mg/L	4.00	0.24	76.7	75-125	2.29	20	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	Sarah McCloskey	26-Jan-16 11:15

Notes and Definitions

SPK1	The spike recovery is outside of quality 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

Client: Bridgecreek Resources

Project: Osprey 30-7

Sampler: Sarah McCloskey

Phone: 970-769-1401

Email(s): Sarahm@adkinsenvironmental.com

Project Manager: Sarah McCloskey

RUSH? ☐ 1d ☐ 3d

Lab Use Only
Lab WO# P601017
Job Number 15090-0001

Page ___ of ___

Sample ID	Sample Date	Sample Time	Matrix	Containers QTY - Vol/TYPE/Preservative	GRO/DRO by 8015	BTEX by 8021	TPH by 418.1	Chloride by 300.0	Table 910-1					Lab Only: Lab Number	Lab Only: Correct Cont/Prsrv (s) Y/N
					Analysis and Method										
Confirmation Sample	1/18/16	12:20	Soil	4 4oz jars/ICE	X			X	X					1	4

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	1/18/16	12:20	[signature]	1/18/16	16:20
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only
**Received on Ice (Y) / N
T1____ T2____ T3____
AVG Temp °C 4.0

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other ____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

**Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

☐ Sample(s) dropped off after hours to a secure drop off area.

Chain of Custody

Notes/Billing info:
55% fines, 40% clay lump, 5% rock

envirotech Analytical Laboratory
5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fx (800) 362-1879
envirotech-inc.com labadmin@envirotech-inc.com

ANALYTICAL REPORT

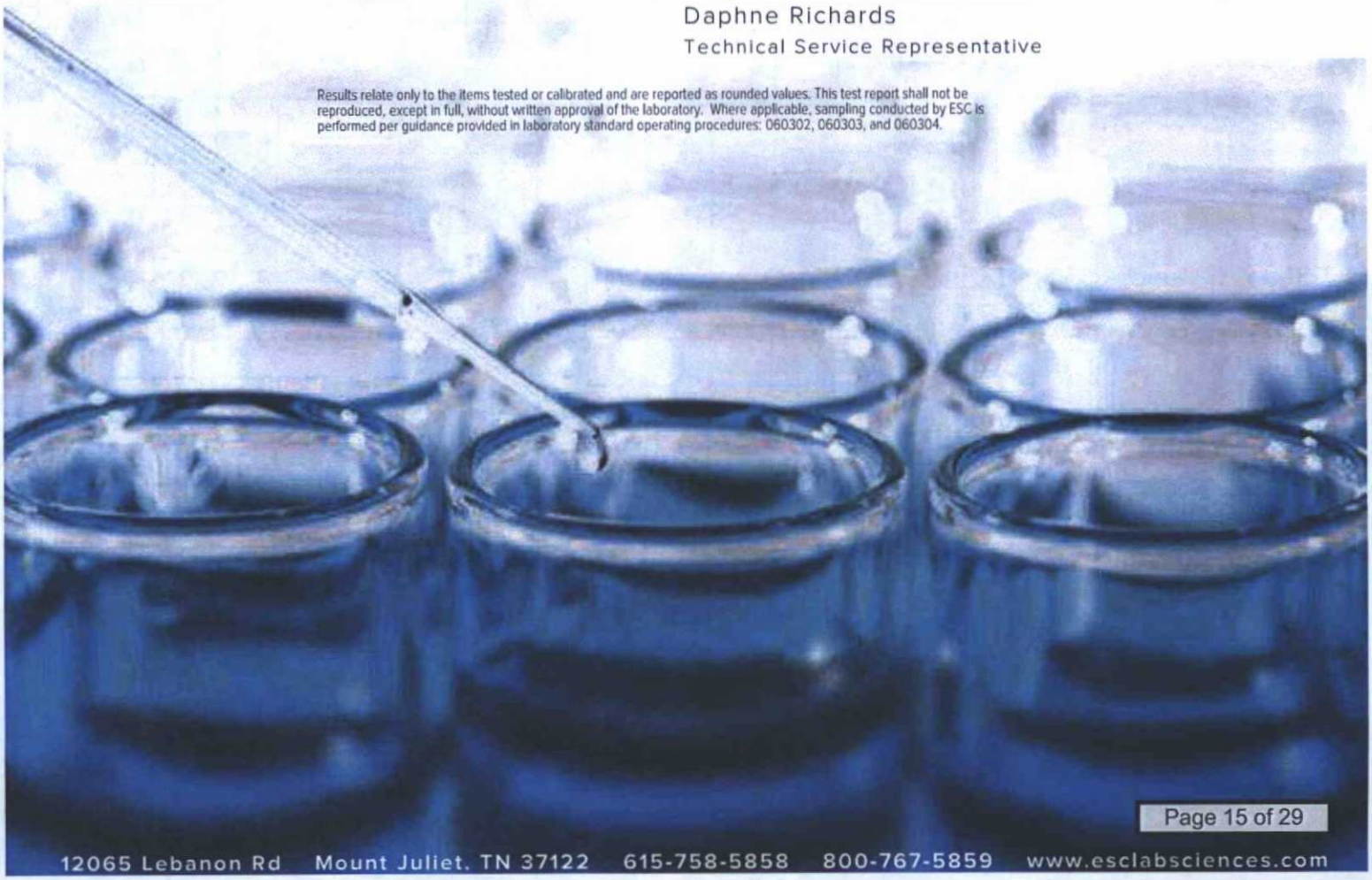
January 25, 2016

EnviroTech- NM

Sample Delivery Group:	L812885
Samples Received:	01/20/2016
Project Number:	15090-0001
Description:	Osprey 30-7
Site:	P601017
Report To:	Tim Cain and Lynn Cook 5796 US. Highway 64 Farmington, NM 87401

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative



12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.esclabsciences.com

TABLE OF CONTENTS

ONE LAB. NATIONWIDE.

CONFIRMATION SAMPLE L812885-01 Solid

Collected by: Sarah McCloskey
Collected date/time: 01/18/16 12:20
Received date/time: 01/20/16 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG843639	1	01/20/16 23:39	01/21/16 14:52	KMP
Total Solids by Method 2540 G-2011	WG843814	1	01/21/16 11:26	01/21/16 11:35	MEL
Wet Chemistry by Method 2580 B-2011	WG844116	1	01/22/16 05:45	01/22/16 07:07	MZ
Wet Chemistry by Method 3060A/7196A	WG843893	1	01/21/16 11:47	01/22/16 07:22	SJM
Wet Chemistry by Method 9045D	WG843683	1	01/21/16 09:10	01/21/16 09:10	AMC

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 R Richards

Daphne Richards
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.2		1	01/21/2016 11:35	WG843814

Wet Chemistry by Method 2580 B-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	mV			date / time	
ORP	108		1	01/22/2016 07:07	WG844116

Wet Chemistry by Method 3060A/7196A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chromium,Hexavalent	ND	J6 O1	2.24	1	01/22/2016 07:22	WG843893

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.62		1	01/21/2016 09:10	WG843683

Sample Narrative:

9045D L812885-01 WG843683: 6.62 at 25.3c

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		0.00673	1	01/21/2016 14:52	WG843639
Acenaphthene	ND		0.00673	1	01/21/2016 14:52	WG843639
Acenaphthylene	ND		0.00673	1	01/21/2016 14:52	WG843639
Benzo(a)anthracene	ND		0.00673	1	01/21/2016 14:52	WG843639
Benzo(a)pyrene	ND		0.00673	1	01/21/2016 14:52	WG843639
Benzo(b)fluoranthene	ND		0.00673	1	01/21/2016 14:52	WG843639
Benzo(g,h,i)perylene	ND		0.00673	1	01/21/2016 14:52	WG843639
Benzo(k)fluoranthene	ND		0.00673	1	01/21/2016 14:52	WG843639
Chrysene	ND		0.00673	1	01/21/2016 14:52	WG843639
Dibenz(a,h)anthracene	ND		0.00673	1	01/21/2016 14:52	WG843639
Fluoranthene	ND		0.00673	1	01/21/2016 14:52	WG843639
Fluorene	0.0121		0.00673	1	01/21/2016 14:52	WG843639
Indeno(1,2,3-cd)pyrene	ND		0.00673	1	01/21/2016 14:52	WG843639
Naphthalene	0.0838		0.0224	1	01/21/2016 14:52	WG843639
Phenanthrene	0.0276		0.00673	1	01/21/2016 14:52	WG843639
Pyrene	ND		0.00673	1	01/21/2016 14:52	WG843639
1-Methylnaphthalene	0.0697		0.0224	1	01/21/2016 14:52	WG843639
2-Methylnaphthalene	0.100		0.0224	1	01/21/2016 14:52	WG843639
2-Chloronaphthalene	ND		0.0224	1	01/21/2016 14:52	WG843639
(S) Nitrobenzene-d5	*70.1*		*22.1-146*		*01/21/2016 14:52*	WG843639
(S) 2-Fluorobiphenyl	*73.0*		*40.6-122*		*01/21/2016 14:52*	WG843639
(S) p-Terphenyl-d14	*79.9*		*32.2-131*		*01/21/2016 14:52*	WG843639

Method Blank (MB)

(MB) 01/21/16 11:35

Analyte	MB Result %	MB Qualifier	MB RDL %
Total Solids	0.000800		

L812910-01 Original Sample (OS) • Duplicate (DUP)

(OS) 01/21/16 11:35 • (DUP) 01/21/16 11:35

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	83.3	84.4	1	1.29		5

Laboratory Control Sample (LCS)

(LCS) 01/21/16 11:35

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

L813196-01 Original Sample (OS) • Duplicate (DUP)

(OS) 01/22/16 07:07 • (DUP) 01/22/16 07:07

Analyte	Original Result mV	DUP Result mV	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
ORP	226	225	1	0.443		20

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

(LCS) 01/22/16 07:07 • (LCSD) 01/22/16 07:07

Analyte	Spike Amount mV	LCS Result mV	LCSD Result mV	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
ORP	100	98	97	98.0	97.0	90.0-110			1.03	20

Method Blank (MB)

(MB) 01/22/16 07:12

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

L812885-01 Original Sample (OS) • Duplicate (DUP)

(OS) 01/22/16 07:22 • (DUP) 01/22/16 07:23

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1	0.000		20

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

(LCS) 01/22/16 07:13 • (LCSD) 01/22/16 07:15

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 %
Chromium,Hexavalent	97.4	80.8	79.8	83.0	81.9	80.0-120			1.25	20

L812885-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 01/22/16 07:22 • (MS) 01/22/16 07:23 • (MSD) 01/22/16 07:24

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 %
Chromium,Hexavalent	20.0	ND	9.72	9.92	48.6	49.6	1	75.0-125	J6	J6	2.04	20

L812843-01 Original Sample (OS) • Duplicate (DUP)

(OS) 01/21/16 09:10 • (DUP) 01/21/16 09:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.04	7.05	1	0.142		1

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

(LCS) 01/21/16 09:10 • (LCSD) 01/21/16 09:10

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.31	6.37	6.36	101	101	98.5-102			0.157	1

Method Blank (MB)

(MB) 01/21/16 13:06

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	*84.6*		*32.2-131*
(S) Nitrobenzene-d5	*82.0*		*22.1-146*
(S) 2-Fluorobiphenyl	*92.8*		*40.6-122*

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

(LCS) 01/21/16 12:24 • (LCSD) 01/21/16 12:45

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	0.0877	0.0881	110	110	50.3-130			0.390	20
Acenaphthene	0.0800	0.0819	0.0798	102	99.7	52.4-120			2.66	20
Acenaphthylene	0.0800	0.0811	0.0776	101	97.0	49.6-120			4.40	20
Benzo(a)anthracene	0.0800	0.0751	0.0722	93.9	90.2	46.7-125			4.05	20
Benzo(a)pyrene	0.0800	0.0687	0.0734	85.9	91.7	42.3-119			6.61	20
Benzo(b)fluoranthene	0.0800	0.0746	0.0711	93.3	88.9	43.6-124			4.77	20
Benzo(g,h,i)perylene	0.0800	0.0835	0.0807	104	101	45.1-132			3.45	20
Benzo(k)fluoranthene	0.0800	0.0899	0.0871	112	109	46.1-131			3.18	20

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

(LCS) 01/21/16 12:24 • (LCSD) 01/21/16 12:45

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	0.0877	0.0845	110	106	49.5-131			3.69	20
Dibenz(a,h)anthracene	0.0800	0.0821	0.0771	103	96.3	44.8-133			6.32	20
Fluoranthene	0.0800	0.0772	0.0738	96.5	92.2	49.3-128			4.55	20
Fluorene	0.0800	0.0721	0.0703	90.1	87.9	50.6-121			2.51	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0849	0.0800	106	100	46.1-135			5.85	20
Naphthalene	0.0800	0.0796	0.0756	99.5	94.5	49.6-115			5.17	20
Phenanthrene	0.0800	0.0779	0.0745	97.4	93.2	48.8-121			4.44	20
Pyrene	0.0800	0.0868	0.0868	108	109	44.7-130			0.0600	20
1-Methylnaphthalene	0.0800	0.0694	0.0675	86.8	84.4	50.6-122			2.83	20
2-Methylnaphthalene	0.0800	0.0705	0.0676	88.1	84.5	50.4-120			4.10	20
2-Chloronaphthalene	0.0800	0.0770	0.0760	96.3	95.0	53.9-121			1.31	20
(S) p-Terphenyl-d14				*89.0*	*88.4*	*32.2-131*				
(S) Nitrobenzene-d5				*85.0*	*84.0*	*22.1-146*				
(S) 2-Fluorobiphenyl				*89.5*	*90.6*	*40.6-122*				

L812993-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 01/21/16 18:45 • (MS) 01/21/16 19:06 • (MSD) 01/21/16 19:27

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	0.0853	0.0846	107	106	1	26.5-141			0.840	21.2
Acenaphthene	0.0800	ND	0.0797	0.0767	99.6	95.9	1	31.9-130			3.83	20
Acenaphthylene	0.0800	ND	0.0796	0.0765	99.5	95.6	1	33.7-129			4.01	20
Benzo(a)anthracene	0.0800	ND	0.0670	0.0657	83.8	82.1	1	18.3-136			1.98	24.6
Benzo(a)pyrene	0.0800	ND	0.0735	0.0726	91.9	90.7	1	16.9-135			1.28	25.2
Benzo(b)fluoranthene	0.0800	ND	0.0662	0.0654	82.7	81.7	1	10.0-134			1.18	30.9
Benzo(g,h,i)perylene	0.0800	ND	0.0715	0.0703	89.4	87.9	1	14.1-140			1.69	25.5
Benzo(k)fluoranthene	0.0800	ND	0.0735	0.0788	91.9	98.6	1	18.2-138			6.99	25.6
Chrysene	0.0800	ND	0.0811	0.0769	101	96.1	1	17.1-145			5.42	24.2
Dibenz(a,h)anthracene	0.0800	ND	0.0792	0.0736	99.0	92.0	1	18.5-138			7.32	24.3
Fluoranthene	0.0800	ND	0.0700	0.0673	87.4	84.1	1	15.4-144			3.85	27.1
Fluorene	0.0800	ND	0.0691	0.0684	86.4	85.5	1	23.5-136			1.09	20
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0796	0.0752	99.5	94.0	1	14.5-142			5.72	25.8
Naphthalene	0.0800	0.000940	0.0753	0.0686	93.0	84.6	1	29.2-128			9.29	20
Phenanthrene	0.0800	ND	0.0732	0.0733	91.5	91.6	1	20.1-134			0.100	23.6
Pyrene	0.0800	ND	0.0794	0.0794	99.3	99.2	1	11.0-148			0.110	26.1

L812993-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 01/21/16 18:45 • (MS) 01/21/16 19:06 • (MSD) 01/21/16 19:27

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	0.0673	0.0623	84.1	77.8	1	28.4-137			7.75	20
2-Methylnaphthalene	0.0800	ND	0.0673	0.0625	84.2	78.1	1	26.6-137			7.48	20
2-Chloronaphthalene	0.0800	ND	0.0776	0.0728	97.1	91.0	1	38.6-126			6.42	20
(S) p-Terphenyl-d14					*85.3*	*83.6*		*32.2-131*				
(S) Nitrobenzene-d5					*86.8*	*82.9*		*22.1-146*				
(S) 2-Fluorobiphenyl					*92.2*	*92.5*		*40.6-122*				

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.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

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
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	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 [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	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		

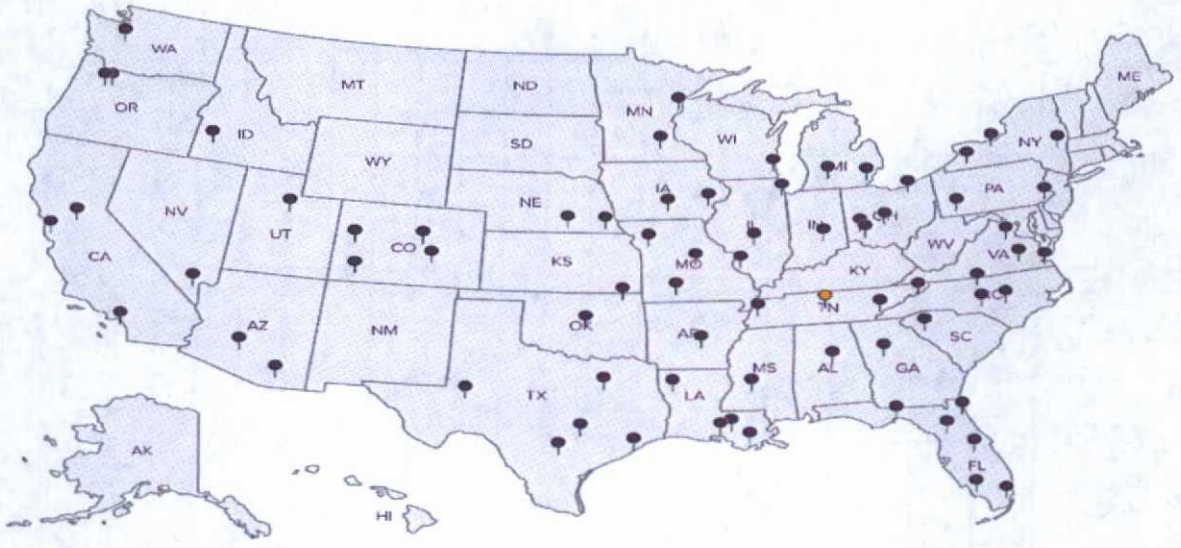
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [na] 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.**



Company Name/Address:	Billing Information:	Analysis / Container / Preservative	Chain of Custody Page ___ of ___
Envirotech Inc. -NM 5796 US Highway 64 Farmington, NM 87401	Accounts Payable 5796 US Highway 64 Farmington, NM 87401	PAH by 8270 Sim / 4 oz. jar; Hexavalent Chromium / 4 oz. jar	ESC LAB SCIENCES — YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859

Report to: Lynn Cook & Tim Cain	Email To: Lynn Cook & Tim Cain		L# L812885 A066
Project Description: Osprey 30-7	City/State Collected:		Acctnum:
Phone: Fax:	Client Project # 15090-0001	Lab Project #	Template:
Collected by (print): Sarah McCloskey	Site/Facility ID # PL01017	P.O. # 142780	Prelogin:
Collected by (signature):	Rush? (Lab MUST Be Notified) ___ Same Day 200% ___ Next Day 100% ___ Two Day 50% ___ Three Day 25%	Date Results Needed 01-25-16 Email? __No ✓Yes FAX? ✓No __Yes	TSR: PB:
Immediately Packed on Ice N___ Y ✓			Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAH by 8270 Sim	Hexavalent Chromium	Rem./Contaminant	Sample # (lab only)
Confirmation Sample		SS		1-18-16	1220	2	X	X		-01

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ________

Remarks: No Min. Inv. Fee, Quote: ENVROFMN1009155 ; Pull representative matrix from jar which is approx. 56% fines, 40% clay lump, 5% rock

pH ______ Temp ______ Flow ______ Other ______

Hold #

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ____	Condition: (lab use only)
Vickie Thompson	1/19/16	1630	FEDEX		600 OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6 °C Bottles Received: 2 = 4a	COC Seal Intact: ___Y ___N ✓NA
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 1/20/16 Time: 0900	pH Checked: NCF:

Figures

Table 1: Summary of Analytical Results

Sample ID	Description	Date	TPH(EPA 8015)	Benzene	Toluene	Ethylbenzene	Xylenes (total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	5pt composite from bin 1	11/24/2015	817	0.55	2.15	0.76	4.59
2	5pt composite from bin 1	11/24/2015	582	2.93	5.56	1.77	6.26
3	5pt composite from bin 2	11/24/2015	114.7	0.2	1.34	0.28	1.97
Spoil Pile	From Prairie Falcon 19-1	3/31/2015	<65	<0.050	<0.050	<0.050	<0.099
UMU Table (CDGCC Table 910-1)			**500**	**0.17**	**85**	**100**	**175**
NMOCD (Rule 19.15.17; DTW > 100 ft)			**1,000**	**10**			
CDPHE-HMWMD/EPA RSLs				**5.10**	**4,700**	**25**	**250**

Notes:
exceeds UMU Table standards
exceeds EPA RSL Standards
na = not analyzed

Table 1: Summary of Analytical Results

Sample ID	Description	Date	Chloride	Mercury	Arsenic	Barium	Boron	Cadmium	Chromium	Chromium VI	Copper	Lead	Nickel	Selenium	Silver
			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	5pt composite from bin 1	11/24/2015	38.8	<0.88	4.19	122	<0.50	<0.88	22.1	na	<1.76	12	11.9	<4.39	<0.88
2	5pt composite from bin 1	11/24/2015	118	<0.91	4.78	183	<0.50	<0.91	47.4	na	<1.82	21.2	19.1	<4.55	<0.91
3	5pt composite from bin 2	11/24/2015	173	<0.92	5.58	214	<0.50	<0.92	19.1	na	<1.85	24	7.44	<4.61	<0.92
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	0.39	15,000	4 (exempt)	70	120,000	23	3,100	400	1,600	390	390
NMOCD (Rule 19.15.17; DTW > 100 ft)			80,000												
CDPHE-HMWMD/EPA RSLs				35	3.00	22,400		98	180,000	6	4,700	800	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	5pt composite from bin 1	11/24/2015	46.5	9.66	0.155	<0.00845	0.0229	<0.00845	<0.00845	<0.00845	<0.00845	<0.00845
2	5pt composite from bin 1	11/24/2015	60.7	9.3	0.139	<0.00798	0.0094	<0.00798	<0.00798	<0.00798	<0.00798	<0.00798
3	5pt composite from bin 2	11/24/2015	54.1	9.43	0.167	<0.00825	<0.00825	<0.00825	<0.00825	<0.00825	<0.00825	<0.00825
Spoil 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**	**29**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**0.22**	**22**
NMOCD (Rule 19.15.17; DTW > 100 ft)												
CDPHE-HM/WMD/EPA RSLs			**85,000**		**17**	**4,500**	**3,000**	**23,000**	**3,000**	**2,300**	**2.90**	**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	Benzo(K)floranthene	Benzo(A)pyrene	Dibenzo(A,H)anthracene
			mg/kg	mg/kg	mg/kg	mg/kg
1	5pt composite from bin 1	11/24/2015	<0.00845	<0.00845	<0.00845	<0.00845
2	5pt composite from bin 1	11/24/2015	<0.00798	<0.00798	<0.00798	<0.00798
3	5pt composite from bin 2	11/24/2015	<0.00825	<0.00825	<0.00825	<0.00825
Spoil Pile	From Prairie Falcon 19-1	3/31/2015	<0.020	<0.020	<0.020	<0.020
UMU Table (COGCC Table 910-1)			**0.22**	**2.20**	**0.022**	**0.022**
NMOCD (Rule 19.15.17; DTW > 100 ft)						
CDPHE-HMWMD/EPA RSLs			**2.90**	**29.00**	**0.29**	**0.290**

Notes:

exceeds UMU 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 Absportion Ratio	Electrical Conductivity
			mg/kg	--	mmhos/cm
1	5pt composite from bin 1	11/24/2015	<0.00845	1.93	0.99
2	5pt composite from bin 1	11/24/2015	<0.00798	3.11	3.05
3	5pt composite from bin 2	11/24/2015	<0.00825	3.01	2.28
Spoil Pile	From Prairie Falcon 19-1	3/31/2015	<0.020	5.4	1.32
UMU Table (COGCC Table 910-1)			**0.22**	**<12**	**<8 or 2x background**
NMOCD (Rule 19.15.17; DTW > 100 ft)					
CDPHE-HMWMD/EPA RSLs			**2.90**		

Notes:
exceeds UMU Table standards
exceeds EPA RSL Standards
na = not analyzed

Table 2: Mixing Ratio

Mixing Ratio	TPH(EPA 8015)	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Chloride	Mercury	Arsenic	Barium	Boron	Cadmium	Chromium
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	284.78	0.64	1.53	0.49	2.19	66.47	0.47	4.33	156.50	NA	0.50	18.37
2:1	211.52	0.44	1.04	0.35	1.49	51.98	0.32	4.15	151.00	NA	0.37	14.64
3:1	174.89	0.34	0.79	0.27	1.14	44.73	0.25	4.06	148.25	NA	0.30	12.78

UMU Table (COGCC Table 910-1)	**500**	**0.17**	**85**	**100**	**175**		**23**	**0.39**	**15,000**		**70**	**120,000**
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**		**98**	**180,000**

Notes:

exceeds UMU Table standards

exceeds EPA RSL Standards

Table 2: Mixing Ratio

Mixing Ratio	Chromium VI	Copper	Lead	Nickel	Selenium	Silver	Zinc	pH	Naphthalene	Acenaphthene	Fluorene	Anthracene	Fluoranthene
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	na	4.00	11.23	10.31	3.46	0.58	40.38	8.78	0.09	0.01	0.02	0.01	0.01
2:1	na	4.73	8.62	9.47	3.11	0.47	35.92	8.55	0.06	0.02	0.02	0.02	0.02
3:1	na	5.10	7.32	9.05	2.93	0.41	33.69	8.44	0.05	0.02	0.02	0.02	0.02
UMU Table (COGCC Table 910-1)	**23**	**3,100**	**400**	**1,600**	**390**	**390**	**23,000**	**6-9**	**23**	**1,000**	**1,000**	**1,000**	**1,000**
NMOCD (Rule 19.15.17; DTW > 100 ft)													
CDPHE-HMWMD/EPA RSLs	**6.30**	**4,700**	**800**	**2,200**	**580**	**580**	**35,000**		**17**	**4,500**	**3,000**	**23,000**	**3,000**

Notes:
exceeds UMU Table standards
exceeds EPA RSL Standards

Table 2: Mixing Ratio

Mixing Ratio	Pyrene	Benzo(A)anthracene	Chrysene	Benzo(B)fluoranthene	Benzo(K)floranthene	Benzo(A)pyrene	Dibenzo(A,H)anthracene
clean:cuttings	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1:1	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2:1	0.02	0.02	0.02	0.02	0.02	0.02	0.02
3:1	0.02	0.02	0.02	0.02	0.02	0.02	0.02

UMU Table (COGCC Table 910-1)	**1,000**	**0.22**	**22**	**0.22**	**2.20**	**0.022**	**0.022**
NMOCD (Rule 19.15.17; DTW > 100 ft)							
CDPHE-HMWMD/EPA RSLs	**2,300**	**2.90**	**290**	**2.90**	**29**	**0.29**	**0.29**

Notes:
exceeds UMU Table standards
exceeds EPA RSL Standards

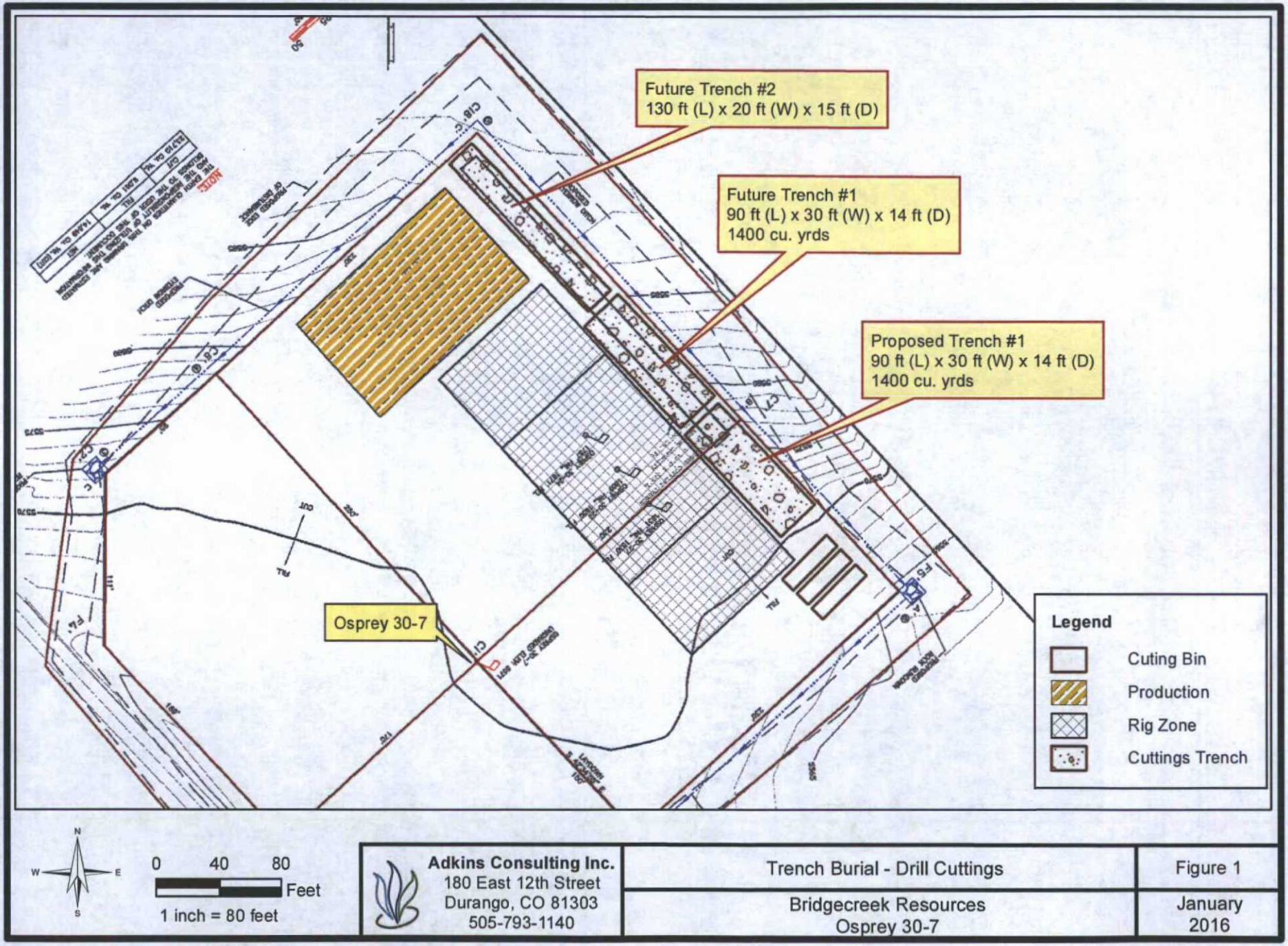
Table 2: Mixing Ratio

Mixing Ratio	Indeno(1,2,3-cd)pyrene	Sodium Absportion Ratio	Electrical Conductivity
clean:cuttings	mg/kg	--	mmhos/cm
1:1	0.01	4.04	1.71
2:1	0.02	4.49	1.58
3:1	0.02	4.72	1.52

UMU Table (COGCC Table 910-1)	**0.22**	**<12**	**<4 or 2x background**
NMOCD (Rule 19.15.17; DTW > 100 ft)			
CDPHE-HMWMD/EPA RSLs	**2.9**		

Notes:
exceeds UMU Table standards
exceeds EPA RSL Standards

Appendix A



Adkins Consulting Inc. 180 East 12th Street Durango, CO 81303 505-793-1140	Trench Burial - Drill Cuttings	Figure 1
	Bridgecreek Resources Osprey 30-7	January 2016

Tables

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Bridgecreek Resources, LLC
Chain Of Custody Number:
Samples Received: 11/24/2015 2:56:00PM
Job Number: 15090-0001
Work Order: P511060
Project Name/Location: Osprey 30-7

Entire Report Reviewed By: _____ Date: 12/4/15

Tim Cain, Laboratory Manager

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879
envirotech-inc.com
laboratory@envirotech-inc.com

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
#1	P511060-01A	Soil	11/24/15	11/24/15	Glass Jar, 4 oz.
	P511060-01B	Soil	11/24/15	11/24/15	Glass Jar, 4 oz.
#2	P511060-02A	Soil	11/24/15	11/24/15	Glass Jar, 4 oz.
	P511060-02B	Soil	11/24/15	11/24/15	Glass Jar, 4 oz.
#3	P511060-03A	Soil	11/24/15	11/24/15	Glass Jar, 4 oz.
	P511060-03B	Soil	11/24/15	11/24/15	Glass Jar, 4 oz.
#A	P511060-04A	Soil	11/24/15	11/24/15	Glass Jar, 4 oz.
	P511060-04B	Soil	11/24/15	11/24/15	Glass Jar, 4 oz.

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879
envirotech-inc.com
laboratory@envirotech-inc.com

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

#1

P511060-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**0.55**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Toluene	**2.15**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Ethylbenzene	**0.76**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
p,m-Xylene	**3.48**	0.20	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
o-Xylene	**1.11**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Total Xylenes	**4.59**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Total BTEX	**8.05**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*103 %*		*50-150*	*1549007*	*12/01/15*	*12/03/15*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	**119**	20.0	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**512**	25.0	mg/kg	1	1549018	12/02/15	12/02/15	EPA 8015D	
Oil Range Organics (C28-C40+)	**186**	50.0	mg/kg	1	1549018	12/02/15	12/02/15	EPA 8015D	
Surrogate: n-Nonane		*113 %*		*50-200*	*1549018*	*12/02/15*	*12/02/15*	*EPA 8015D*	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*101 %*		*50-150*	*1549007*	*12/01/15*	*12/03/15*	*EPA 8015D*	
Total Metals by 6010									
Arsenic	**4.19**	0.88	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Barium	**122**	8.79	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Cadmium	ND	0.88	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Chromium	**22.1**	4.39	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Copper	ND	1.76	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Lead	**12.0**	0.88	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Mercury	ND	0.88	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Nickel	**11.9**	0.88	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Selenium	ND	4.39	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Silver	ND	0.88	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Zinc	**46.5**	1.76	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

#1

P511060-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
pH @25°C	**9.66**		pH Units	1	1549001	11/30/15	11/30/15	EPA 9045D	
Electrical Conductivity	**990**		umhos/cm	1	1549001	11/30/15	11/30/15	9050A/2510	
Sodium Absorption Ratio	**1.93**		N/A	1	1549034	12/04/15	12/04/15	[CALC]	
Chloride	**38.8**	20.0	mg/kg	1	1549016	12/02/15	12/02/15	EPA 300.0	
Calcium	**23.8**	0.50	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Magnesium	**9.55**	0.20	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Sodium	**44.0**	2.00	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Boron-Hot Water Soluble by EPA 6010									
Boron	ND	0.50	mg/L	1	1549009	12/01/15	12/03/15	EPA 6010C	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

#2

P511060-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**2.93**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Toluene	**5.56**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Ethylbenzene	**1.77**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
p,m-Xylene	**4.53**	0.20	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
o-Xylene	**1.74**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Total Xylenes	**6.26**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Total BTEX	**16.5**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*102 %*		*50-150*	*1549007*	*12/01/15*	*12/03/15*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	**180**	20.0	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**279**	25.0	mg/kg	1	1549018	12/02/15	12/02/15	EPA 8015D	
Oil Range Organics (C28-C40+)	**123**	50.0	mg/kg	1	1549018	12/02/15	12/02/15	EPA 8015D	
Surrogate: n-Nonane		*109 %*		*50-200*	*1549018*	*12/02/15*	*12/02/15*	*EPA 8015D*	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*102 %*		*50-150*	*1549007*	*12/01/15*	*12/03/15*	*EPA 8015D*	
Total Metals by 6010									
Arsenic	**4.78**	0.91	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Barium	**183**	9.09	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Cadmium	ND	0.91	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Chromium	**47.4**	4.55	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Copper	ND	1.82	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Lead	**21.2**	0.91	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Mercury	ND	0.91	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Nickel	**19.3**	0.91	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Selenium	ND	4.55	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Silver	ND	0.91	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Zinc	**60.7**	1.82	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

#2

P511060-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
pH @25°C	**9.30**		pH Units	1	1549001	11/30/15	11/30/15	EPA 9045D	
Electrical Conductivity	**3050**		umhos/cm	1	1549001	11/30/15	11/30/15	9050A/2510	
Sodium Absorption Ratio	**3.11**		N/A	1	1549034	12/04/15	12/04/15	[CALC]	
Chloride	**118**	20.0	mg/kg	1	1549016	12/02/15	12/02/15	EPA 300.0	
Calcium	**48.0**	0.50	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Magnesium	**31.5**	0.20	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Sodium	**113**	2.00	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Boron-Hot Water Soluble by EPA 6010									
Boron	ND	0.50	mg/L	1	1549009	12/01/15	12/03/15	EPA 6010C	

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

#3

P511060-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**0.20**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Toluene	**1.34**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Ethylbenzene	**0.28**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
p,m-Xylene	**1.31**	0.20	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
o-Xylene	**0.66**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Total Xylenes	**1.97**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Total BTEX	**3.79**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*104 %*		*50-150*	*1549007*	*12/01/15*	*12/03/15*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	**24.5**	20.0	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**40.2**	25.0	mg/kg	1	1549018	12/02/15	12/02/15	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1549018	12/02/15	12/02/15	EPA 8015D	
Surrogate: n-Nonane		*103 %*		*50-200*	*1549018*	*12/02/15*	*12/02/15*	*EPA 8015D*	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*97.8 %*		*50-150*	*1549007*	*12/01/15*	*12/03/15*	*EPA 8015D*	
Total Metals by 6010									
Arsenic	**5.58**	0.92	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Barium	**214**	9.23	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Cadmium	ND	0.92	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Chromium	**19.1**	4.61	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Copper	ND	1.85	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Lead	**24.0**	0.92	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Mercury	ND	0.92	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Nickel	**7.44**	0.92	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Selenium	ND	4.61	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Silver	ND	0.92	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Zinc	**54.1**	1.85	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

#3

P511060-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
pH @25°C	**9.43**		pH Units	1	1549001	11/30/15	11/30/15	EPA 9045D	
Electrical Conductivity	**2280**		umhos/cm	1	1549001	11/30/15	11/30/15	9050A/2510	
Sodium Absorption Ratio	**3.01**		N/A	1	1549034	12/04/15	12/04/15	[CALC]	
Chloride	**173**	20.0	mg/kg	1	1549016	12/02/15	12/02/15	EPA 300.0	
Calcium	**32.5**	0.50	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Magnesium	**22.5**	0.20	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Sodium	**91.3**	2.00	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Boron-Hot Water Soluble by EPA 6010									
Boron	ND	0.50	mg/L	1	1549009	12/01/15	12/03/15	EPA 6010C	

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

#A

P511060-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**0.49**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Toluene	**1.36**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Ethylbenzene	**0.52**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
p,m-Xylene	**1.64**	0.20	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
o-Xylene	**0.59**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Total Xylenes	**2.23**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Total BTEX	**4.60**	0.10	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*103 %*		*50-150*	*1549007*	*12/01/15*	*12/03/15*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	**52.6**	20.0	mg/kg	1	1549007	12/01/15	12/03/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**251**	25.0	mg/kg	1	1549018	12/02/15	12/02/15	EPA 8015D	
Oil Range Organics (C28-C40+)	**103**	50.0	mg/kg	1	1549018	12/02/15	12/02/15	EPA 8015D	
Surrogate: n-Nonane		*109 %*		*50-200*	*1549018*	*12/02/15*	*12/02/15*	*EPA 8015D*	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*97.9 %*		*50-150*	*1549007*	*12/01/15*	*12/03/15*	*EPA 8015D*	
Total Metals by 6010									
Arsenic	**5.49**	0.90	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Barium	**2340**	9.01	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Cadmium	ND	0.90	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Chromium	**29.5**	4.50	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Copper	ND	1.80	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Lead	**17.4**	0.90	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Mercury	ND	0.90	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Nickel	**11.9**	0.90	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Selenium	ND	4.50	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Silver	ND	0.90	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	
Zinc	**55.1**	1.80	mg/kg	0.9	1549010	12/01/15	12/03/15	EPA 6010C	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

#A

P511060-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
pH @22.1°C	**8.22**		pH Units	1	1549001	11/30/15	11/30/15	EPA 9045D	
Electrical Conductivity	**3370**		umhos/cm	1	1549001	11/30/15	11/30/15	9050A/2510	
Sodium Absorption Ratio	**5.75**		N/A	1	1549034	12/04/15	12/04/15	[CALC]	
Chloride	**248**	20.0	mg/kg	1	1549016	12/02/15	12/02/15	EPA 300.0	
Calcium	**22.9**	0.50	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Magnesium	**7.16**	0.20	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Sodium	**123**	2.00	mg/L	1	1549015	12/02/15	12/03/15	EPA 6010C	
Boron-Hot Water Soluble by EPA 6010									
Boron	ND	0.50	mg/L	1	1549009	12/01/15	12/03/15	EPA 6010C	

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

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
Batch 1549007 - Purge and Trap EPA 5030A										
Blank (1549007-BLK1)				Prepared: 01-Dec-15 Analyzed: 03-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	*0.330*		"	*0.320*		*103*	*50-150*			
LCS (1549007-BS1)				Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Benzene	11.3	0.10	mg/kg	10.0		113	70-130			
Toluene	11.1	0.10	"	10.0		111	70-130			
Ethylbenzene	11.1	0.10	"	10.0		111	70-130			
p,m-Xylene	22.0	0.20	"	20.0		110	70-130			
o-Xylene	10.7	0.10	"	10.0		107	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*0.329*		"	*0.320*		*103*	*50-150*			
Matrix Spike (1549007-MS1)		**Source: P511062-01**		Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Benzene	11.9	0.10	mg/kg	10.0	ND	119	54.3-133			
Toluene	11.7	0.10	"	10.0	ND	117	61.4-130			
Ethylbenzene	11.7	0.10	"	10.0	ND	117	61.4-133			
p,m-Xylene	23.0	0.20	"	20.0	ND	115	63.3-131			
o-Xylene	11.2	0.10	"	10.0	ND	112	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*0.329*		"	*0.320*		*103*	*50-150*			
Matrix Spike Dup (1549007-MSD1)		**Source: P511062-01**		Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Benzene	11.4	0.10	mg/kg	10.0	ND	114	54.3-133	3.68	20	
Toluene	11.2	0.10	"	10.0	ND	112	61.4-130	3.78	20	
Ethylbenzene	11.2	0.10	"	10.0	ND	112	61.4-133	3.98	20	
p,m-Xylene	22.1	0.20	"	20.0	ND	111	63.3-131	3.94	20	
o-Xylene	10.9	0.10	"	10.0	ND	109	63.3-131	2.79	20	
Surrogate: 4-Bromochlorobenzene-PID	*0.327*		"	*0.320*		*102*	*50-150*			

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

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
Batch 1549007 - Purge and Trap EPA 5030A										
Blank (1549007-BLK1)				Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*0.293*		"	*0.320*		*91.7*	*50-150*			
LCS (1549007-BS1)				Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Gasoline Range Organics (C6-C10)	119	20.0	mg/kg	106		113	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*0.304*		"	*0.320*		*94.9*	*50-150*			
Matrix Spike (1549007-MS1)		**Source: P511062-01**		Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Gasoline Range Organics (C6-C10)	132	20.0	mg/kg	106	ND	125	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*0.312*		"	*0.320*		*97.5*	*50-150*			
Matrix Spike Dup (1549007-MSD1)		**Source: P511062-01**		Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Gasoline Range Organics (C6-C10)	120	20.0	mg/kg	106	ND	113	70-130	9.78	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*0.299*		"	*0.320*		*93.4*	*50-150*			

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

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
Batch 1549018 - DRO Extraction EPA 3550M										
Blank (1549018-BLK1)				Prepared & Analyzed: 02-Dec-15						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40+)	ND	50.0	"							
Surrogate: n-Nonane	*52.2*		"	*50.0*		*104*	*50-200*			
LCS (1549018-BS1)				Prepared: 02-Dec-15 Analyzed: 03-Dec-15						
Diesel Range Organics (C10-C28)	512	25.0	mg/kg	500		102	38-132			
Surrogate: n-Nonane	*54.6*		"	*50.0*		*109*	*50-200*			
Matrix Spike (1549018-MS1)	**Source: P511062-02**			Prepared & Analyzed: 02-Dec-15						
Diesel Range Organics (C10-C28)	615	25.0	mg/kg	500	114	100	38-132			
Surrogate: n-Nonane	*45.9*		"	*50.0*		*91.8*	*50-200*			
Matrix Spike Dup (1549018-MSD1)	**Source: P511062-02**			Prepared & Analyzed: 02-Dec-15						
Diesel Range Organics (C10-C28)	641	25.0	mg/kg	500	114	105	38-132	4.18	20	
Surrogate: n-Nonane	*47.3*		"	*50.0*		*94.7*	*50-200*			

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

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 1549010 - Metal Solid Digestion EPA 3051A										
Blank (1549010-BLK1)				Prepared: 01-Dec-15 Analyzed: 03-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 (1549010-BS1)				Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Arsenic	23.0	1.00	mg/kg	25.0		92.0	80-120			
Barium	533	10.0	"	500		107	80-120			
Cadmium	24.7	1.00	"	25.0		98.7	80-120			
Chromium	51.4	5.00	"	50.0		103	80-120			
Copper	50.1	2.00	"	50.0		100	80-120			
Lead	50.2	1.00	"	50.0		100	80-120			
Mercury	9.87	1.00	"	10.0		98.7	80-120			
Nickel	50.9	1.00	"	50.0		102	80-120			
Selenium	8.92	5.00	"	10.0		89.2	80-120			
Silver	9.59	1.00	"	10.0		95.9	80-120			
Zinc	48.9	2.00	"	50.0		97.8	80-120			
Matrix Spike (1549010-MS1)	**Source: P511060-01**			Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Arsenic	27.3	0.89	mg/kg	22.4	4.19	103	75-125			
Barium	546	8.94	"	447	122	94.8	75-125			
Cadmium	22.1	0.89	"	22.4	ND	98.7	75-125			
Chromium	62.5	4.47	"	44.7	22.1	90.2	75-125			
Copper	43.7	1.79	"	44.7	ND	97.8	75-125			
Lead	52.5	0.89	"	44.7	12.0	90.6	75-125			
Mercury	9.36	0.89	"	8.94	ND	105	75-125			
Nickel	53.7	0.89	"	44.7	11.9	93.5	75-125			
Selenium	9.12	4.47	"	8.94	ND	102	75-125			
Silver	8.76	0.89	"	8.94	ND	97.9	75-125			
Zinc	106	1.79	"	44.7	46.5	133	75-125			SPK1

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

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 1549010 - Metal Solid Digestion EPA 3051A										
Matrix Spike Dup (1549010-MSD1)	**Source: P511060-01**			Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Arsenic	29.4	0.90	mg/kg	22.4	4.19	112	75-125	7.29	20	
Barium	530	8.96	"	448	122	91.1	75-125	3.02	20	
Cadmium	22.3	0.90	"	22.4	ND	99.5	75-125	0.986	20	
Chromium	69.4	4.48	"	44.8	22.1	106	75-125	10.5	20	
Copper	43.1	1.79	"	44.8	ND	96.2	75-125	1.43	20	
Lead	58.3	0.90	"	44.8	12.0	103	75-125	10.5	20	
Mercury	9.36	0.90	"	8.96	ND	105	75-125	0.0121	20	
Nickel	61.7	0.90	"	44.8	11.9	111	75-125	13.8	20	
Selenium	9.89	4.48	"	8.96	ND	110	75-125	8.09	20	
Silver	8.98	0.90	"	8.96	ND	100	75-125	2.50	20	
Zinc	99.7	1.79	"	44.8	46.5	119	75-125	5.92	20	

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1549015 - Metal Water/TCLP (EPA 1311) Digestion EPA 3015A										
Blank (1549015-BLK1)				Prepared: 02-Dec-15 Analyzed: 03-Dec-15						
Calcium	ND	0.50	mg/L							
Magnesium	ND	0.20	"							
Sodium	ND	2.00	"							
LCS (1549015-BS2)				Prepared: 02-Dec-15 Analyzed: 04-Dec-15						
Calcium	42.2		mg/L	45.0		93.8	80-120			
Magnesium	43.8		"	45.0		97.2	80-120			
Sodium	43.4		"	45.0		96.5	80-120			
Matrix Spike (1549015-MS2)	**Source: P512001-01**			Prepared: 02-Dec-15 Analyzed: 04-Dec-15						
Calcium	49.7		mg/L	45.0	9.92	88.5	75-125			
Magnesium	44.5		"	45.0	1.30	96.0	75-125			
Sodium	121		"	45.0	76.8	98.7	75-125			
Matrix Spike Dup (1549015-MSD2)	**Source: P512001-01**			Prepared: 02-Dec-15 Analyzed: 04-Dec-15						
Calcium	51.3		mg/L	45.0	9.92	91.9	75-125	3.01	20	
Magnesium	44.8		"	45.0	1.30	96.7	75-125	0.717	20	
Sodium	122		"	45.0	76.8	101	75-125	0.985	20	

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1549016 - Anion Extraction EPA 300.0										
Blank (1549016-BLK1)				Prepared & Analyzed: 02-Dec-15						
Chloride	ND	20.0	mg/kg							
LCS (1549016-BS1)				Prepared & Analyzed: 02-Dec-15						
Chloride	478	20.0	mg/kg	500		95.5	90-110			
Matrix Spike (1549016-MS1)	**Source: P511060-01**			Prepared: 02-Dec-15 Analyzed: 03-Dec-15						
Chloride	825	20.0	mg/kg	500	38.8	157	80-120			SPK1
Matrix Spike Dup (1549016-MSD1)	**Source: P511060-01**			Prepared: 02-Dec-15 Analyzed: 03-Dec-15						
Chloride	818	20.0	mg/kg	500	38.8	156	80-120	0.784	20	SPK1

envirotech
Analytical Laboratory

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

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
Batch 1549009 - Boron HW Soluble Digestion										
Blank (1549009-BLK1)				Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Boron	ND	0.50	mg/L							
LCS (1549009-BS1)				Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Boron	4.02		mg/L	4.00		101	80-120			
Matrix Spike (1549009-MS1)	**Source: P511060-01**			Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Boron	3.37		mg/L	4.00	0.06	82.7	75-125			
Matrix Spike Dup (1549009-MSD1)	**Source: P511060-01**			Prepared: 01-Dec-15 Analyzed: 03-Dec-15						
Boron	3.65		mg/L	4.00	0.06	89.7	75-125	8.03	20	

Bridgecreek Resources, LLC	Project Name:	Osprey 30-7	
405 Urban St Suite 400	Project Number:	15090-0001	**Reported:**
Lakewood CO, 80228	Project Manager:	John Thompson	04-Dec-15 14:29

Notes and Definitions

SPK1	The spike recovery is outside of quality 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

Client: BridgeCreek

Project: Osprey 30-7

Sampler: John Thompson

Phone: 505-320-1748

Email(s): johnewalsheng.net

Project Manager: John Thompson

RUSH? ☐ 1d ☐ 3d

Lab Use Only

Lab WO# P511060

Job Number 15090-0001

Page 1 of 1

Sample ID	Sample Date	Sample Time	Matrix	Containers QTY - Vol/TYPE/Preservative	GRO/DRO by 8015	BTEX by 8021	TPH by 418.1	Chloride by 300.0	Bridgecreek 9/10	Lab Number	Correct Cont/Prsrv (s) Y/N
#1, ~~#2, #3, A~~	11/24	13:00	S	3 ea 4oz Glass Jars	X			X	X	1	N
#2				2ea						2	
#3				2ea						3	
#A				2ea						4	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	11/24	14:45		11/24/15	14:56
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only

**Received on Ice Y (N)

T1 13.6 T2 13.4 T3 12.1

AVG Temp °C 13.0

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

**Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

☐ Sample(s) dropped off after hours to a secure drop off area.

Chain of Custody

Notes/Billing info:

envirotech Analytical Laboratory

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fx (800) 362-1879

envirotech-inc.com

Client: BridgeCreek

Project: Osprey 30-7 (per existing 11/30/15 TC)

Sampler: John Thompson

Phone: 505-320-1748

Email(s): johnewalsheng.net

Project Manager: John Thompson

RUSH? ☐ 1d ☐ 3d

Lab Use Only

Lab WO# P511060

Job Number 15090-0001

Page 1 of 1

Sample ID	Sample Date	Sample Time	Matrix	Containers QTY - Vol/TYPE/Preservative	GRO/DRO by 8015	BTEX by 8021	TPH by 418.1	Chloride by 300.0	Bridgecreek 9/0	Lab Number	Correct Cont/Prsrv (s) Y/N
#1, ~~#2, #3, #A~~	11/24	13:00	S	3 ea 4oz Glass Jars	X			X	X	1	N
#2				2 ea						2	
#3				2 ea						3	
#A				2 ea						4	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	11/24	14:45		11/24/15	14:56
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only

**Received on Ice Y / N

T1 13.6 T2 13.4 T3 12.1

AVG Temp °C 13.0

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

**Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

☐ Sample(s) dropped off after hours to a secure drop off area.

Chain of Custody

Notes/Billing info:

envirotech Analytical Laboratory

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fx (800) 362-1879

envirotech-inc.com

ANALYTICAL REPORT

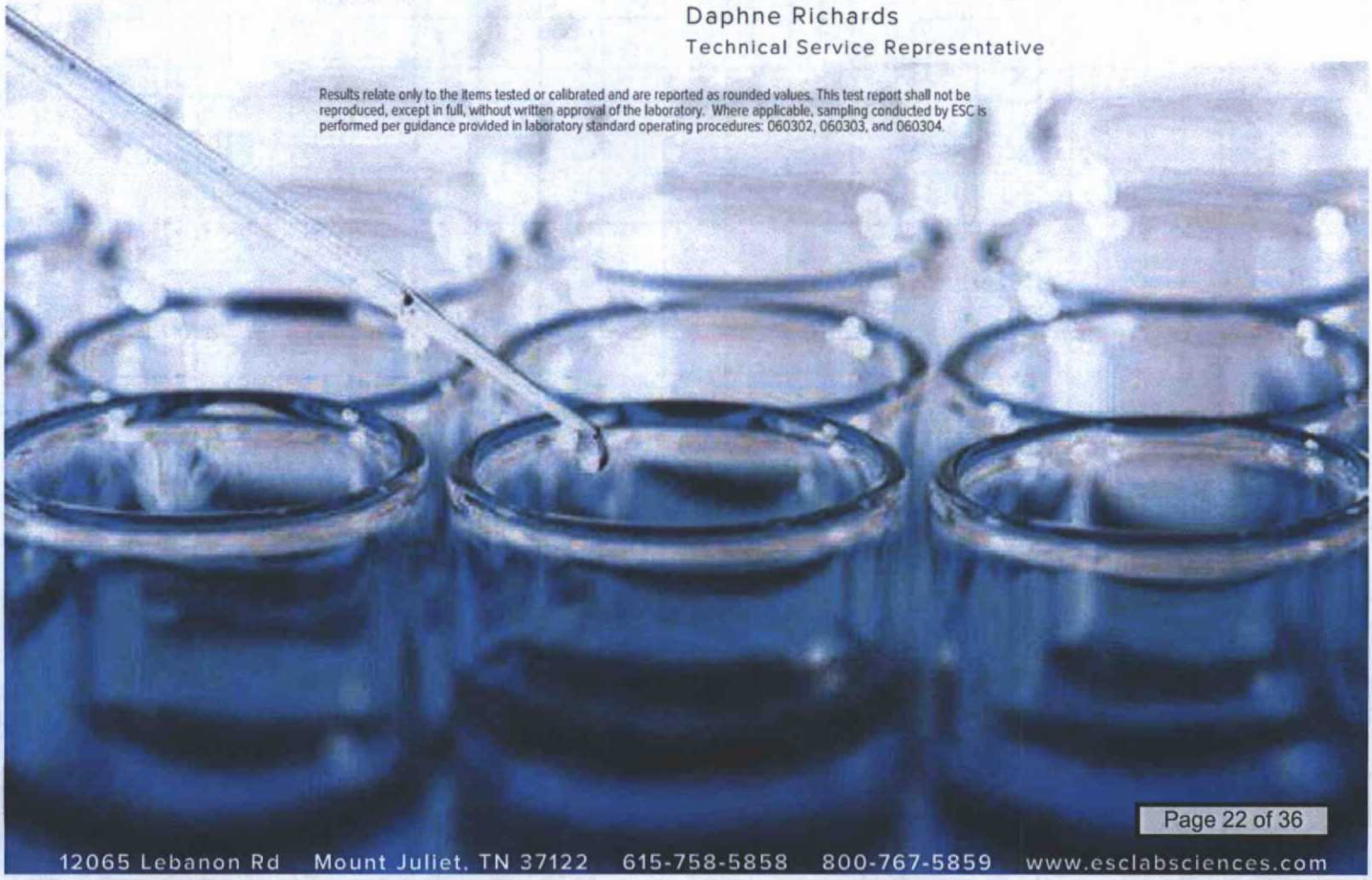
December 02, 2015

EnviroTech- NM

Sample Delivery Group:	L803408
Samples Received:	11/25/2015
Project Number:	15090-0001
Description:	Osprey 30-7
Site:	P511060
Report To:	Tim Cain and Lynn Cook 5796 US. Highway 64 Farmington, NM 87401

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative



12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.esclabsciences.com

TABLE OF CONTENTS

1 L803408-01 Solid

Collected by: John Thompson | Collected date/time: 11/24/15 13:00 | Received date/time: 11/25/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG831890	1	12/01/15 03:49	12/01/15 10:35	KMP
Total Solids by Method 2540 G-2011	WG832244	1	11/30/15 09:29	12/01/15 06:32	MEL

2 L803408-02 Solid

Collected by: John Thompson | Collected date/time: 11/24/15 13:00 | Received date/time: 11/25/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG831890	1	12/01/15 03:49	12/01/15 10:57	KMP
Total Solids by Method 2540 G-2011	WG832244	1	11/30/15 09:29	12/01/15 06:33	MEL

3 L803408-03 Solid

Collected by: John Thompson | Collected date/time: 11/24/15 13:00 | Received date/time: 11/25/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG831890	1	12/01/15 03:49	12/01/15 11:19	KMP
Total Solids by Method 2540 G-2011	WG832244	1	11/30/15 09:29	12/01/15 06:33	MEL

A L803408-04 Solid

Collected by: John Thompson | Collected date/time: 11/24/15 13:00 | Received date/time: 11/25/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG831890	1	12/01/15 03:49	12/01/15 11:40	KMP
Total Solids by Method 2540 G-2011	WG832244	1	11/30/15 09:29	12/01/15 06:33	MEL

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 R Richards

Daphne Richards
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	%				
Total Solids	71.0		1	12/01/2015 06:32	WG832244

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		0.00845	1	12/01/2015 10:35	WG831890
Acenaphthene	ND		0.00845	1	12/01/2015 10:35	WG831890
Acenaphthylene	ND		0.00845	1	12/01/2015 10:35	WG831890
Benzo(a)anthracene	ND		0.00845	1	12/01/2015 10:35	WG831890
Benzo(a)pyrene	ND		0.00845	1	12/01/2015 10:35	WG831890
Benzo(b)fluoranthene	ND		0.00845	1	12/01/2015 10:35	WG831890
Benzo(g,h,i)perylene	ND		0.00845	1	12/01/2015 10:35	WG831890
Benzo(k)fluoranthene	ND		0.00845	1	12/01/2015 10:35	WG831890
Chrysene	ND		0.00845	1	12/01/2015 10:35	WG831890
Dibenz(a,h)anthracene	ND		0.00845	1	12/01/2015 10:35	WG831890
Fluoranthene	ND		0.00845	1	12/01/2015 10:35	WG831890
Fluorene	0.0229		0.00845	1	12/01/2015 10:35	WG831890
Indeno(1,2,3-cd)pyrene	ND		0.00845	1	12/01/2015 10:35	WG831890
Naphthalene	0.155		0.0282	1	12/01/2015 10:35	WG831890
Phenanthrene	0.0412		0.00845	1	12/01/2015 10:35	WG831890
Pyrene	ND		0.00845	1	12/01/2015 10:35	WG831890
1-Methylnaphthalene	0.198		0.0282	1	12/01/2015 10:35	WG831890
2-Methylnaphthalene	0.239		0.0282	1	12/01/2015 10:35	WG831890
2-Chloronaphthalene	ND		0.0282	1	12/01/2015 10:35	WG831890
(S) Nitrobenzene-d5	*74.0*		*22.1-146*		*12/01/2015 10:35*	WG831890
(S) 2-Fluorobiphenyl	*60.3*		*40.6-122*		*12/01/2015 10:35*	WG831890
(S) p-Terphenyl-d14	*53.7*		*32.2-131*		*12/01/2015 10:35*	WG831890

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.2		1	12/01/2015 06:33	WG832244

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		0.00798	1	12/01/2015 10:57	WG831890
Acenaphthene	ND		0.00798	1	12/01/2015 10:57	WG831890
Acenaphthylene	ND		0.00798	1	12/01/2015 10:57	WG831890
Benzo(a)anthracene	ND		0.00798	1	12/01/2015 10:57	WG831890
Benzo(a)pyrene	ND		0.00798	1	12/01/2015 10:57	WG831890
Benzo(b)fluoranthene	ND		0.00798	1	12/01/2015 10:57	WG831890
Benzo(g,h,i)perylene	ND		0.00798	1	12/01/2015 10:57	WG831890
Benzo(k)fluoranthene	ND		0.00798	1	12/01/2015 10:57	WG831890
Chrysene	ND		0.00798	1	12/01/2015 10:57	WG831890
Dibenz(a,h)anthracene	ND		0.00798	1	12/01/2015 10:57	WG831890
Fluoranthene	ND		0.00798	1	12/01/2015 10:57	WG831890
Fluorene	0.00940		0.00798	1	12/01/2015 10:57	WG831890
Indeno(1,2,3-cd)pyrene	ND		0.00798	1	12/01/2015 10:57	WG831890
Naphthalene	0.139		0.0266	1	12/01/2015 10:57	WG831890
Phenanthrene	0.0143		0.00798	1	12/01/2015 10:57	WG831890
Pyrene	ND		0.00798	1	12/01/2015 10:57	WG831890
1-Methylnaphthalene	0.0833		0.0266	1	12/01/2015 10:57	WG831890
2-Methylnaphthalene	0.116		0.0266	1	12/01/2015 10:57	WG831890
2-Chloronaphthalene	ND		0.0266	1	12/01/2015 10:57	WG831890
(S) Nitrobenzene-d5	*82.7*		*22.1-146*		*12/01/2015 10:57*	WG831890
(S) 2-Fluorobiphenyl	*79.3*		*40.6-122*		*12/01/2015 10:57*	WG831890
(S) p-Terphenyl-d14	*70.8*		*32.2-131*		*12/01/2015 10:57*	WG831890

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	72.8		1	12/01/2015 06:33	WG832244

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		0.00825	1	12/01/2015 11:19	WG831890
Acenaphthene	ND		0.00825	1	12/01/2015 11:19	WG831890
Acenaphthylene	ND		0.00825	1	12/01/2015 11:19	WG831890
Benzo(a)anthracene	ND		0.00825	1	12/01/2015 11:19	WG831890
Benzo(a)pyrene	ND		0.00825	1	12/01/2015 11:19	WG831890
Benzo(b)fluoranthene	ND		0.00825	1	12/01/2015 11:19	WG831890
Benzo(g,h,i)perylene	ND		0.00825	1	12/01/2015 11:19	WG831890
Benzo(k)fluoranthene	ND		0.00825	1	12/01/2015 11:19	WG831890
Chrysene	ND		0.00825	1	12/01/2015 11:19	WG831890
Dibenz(a,h)anthracene	ND		0.00825	1	12/01/2015 11:19	WG831890
Fluoranthene	ND		0.00825	1	12/01/2015 11:19	WG831890
Fluorene	ND		0.00825	1	12/01/2015 11:19	WG831890
Indeno(1,2,3-cd)pyrene	ND		0.00825	1	12/01/2015 11:19	WG831890
Naphthalene	0.167		0.0275	1	12/01/2015 11:19	WG831890
Phenanthrene	0.0180		0.00825	1	12/01/2015 11:19	WG831890
Pyrene	ND		0.00825	1	12/01/2015 11:19	WG831890
1-Methylnaphthalene	0.0975		0.0275	1	12/01/2015 11:19	WG831890
2-Methylnaphthalene	0.134		0.0275	1	12/01/2015 11:19	WG831890
2-Chloronaphthalene	ND		0.0275	1	12/01/2015 11:19	WG831890
(S) Nitrobenzene-d5	*87.3*		*22.1-146*		*12/01/2015 11:19*	WG831890
(S) 2-Fluorobiphenyl	*81.2*		*40.6-122*		*12/01/2015 11:19*	WG831890
(S) p-Terphenyl-d14	*72.5*		*32.2-131*		*12/01/2015 11:19*	WG831890

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	82.2	J3	1	12/01/2015 06:33	WG832244

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		0.00730	1	12/01/2015 11:40	WG831890
Acenaphthene	ND		0.00730	1	12/01/2015 11:40	WG831890
Acenaphthylene	ND		0.00730	1	12/01/2015 11:40	WG831890
Benzo(a)anthracene	ND		0.00730	1	12/01/2015 11:40	WG831890
Benzo(a)pyrene	ND		0.00730	1	12/01/2015 11:40	WG831890
Benzo(b)fluoranthene	ND		0.00730	1	12/01/2015 11:40	WG831890
Benzo(g,h,i)perylene	ND		0.00730	1	12/01/2015 11:40	WG831890
Benzo(k)fluoranthene	ND		0.00730	1	12/01/2015 11:40	WG831890
Chrysene	ND		0.00730	1	12/01/2015 11:40	WG831890
Dibenz(a,h)anthracene	ND		0.00730	1	12/01/2015 11:40	WG831890
Fluoranthene	ND		0.00730	1	12/01/2015 11:40	WG831890
Fluorene	0.0211		0.00730	1	12/01/2015 11:40	WG831890
Indeno(1,2,3-cd)pyrene	ND		0.00730	1	12/01/2015 11:40	WG831890
Naphthalene	0.204		0.0243	1	12/01/2015 11:40	WG831890
Phenanthrene	0.0475		0.00730	1	12/01/2015 11:40	WG831890
Pyrene	ND		0.00730	1	12/01/2015 11:40	WG831890
1-Methylnaphthalene	0.180		0.0243	1	12/01/2015 11:40	WG831890
2-Methylnaphthalene	0.238		0.0243	1	12/01/2015 11:40	WG831890
2-Chloronaphthalene	ND		0.0243	1	12/01/2015 11:40	WG831890
(S) Nitrobenzene-d5	*83.7*		*22.1-146*		*12/01/2015 11:40*	WG831890
(S) 2-Fluorobiphenyl	*77.3*		*40.6-122*		*12/01/2015 11:40*	WG831890
(S) p-Terphenyl-d14	*76.5*		*32.2-131*		*12/01/2015 11:40*	WG831890

Method Blank (MB)

(MB) 12/01/15 06:31

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

L803408-04 Original Sample (OS) • Duplicate (DUP)

(OS) 12/01/15 06:33 • (DUP) 12/01/15 06:33

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	82.2	86.7	1	5.33	J3	5

Laboratory Control Sample (LCS)

(LCS) 12/01/15 06:31

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

Method Blank (MB)

(MB) 12/01/15 09:30

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	*75.8*		*32.2-131*
(S) Nitrobenzene-d5	*83.1*		*22.1-146*
(S) 2-Fluorobiphenyl	*79.5*		*40.6-122*

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

(LCS) 12/01/15 08:47 • (LCSD) 12/01/15 09:09

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	0.0754	0.0722	94.2	90.2	50.3-130			4.35	20
Acenaphthene	0.0800	0.0682	0.0655	85.3	81.9	52.4-120			4.04	20
Acenaphthylene	0.0800	0.0675	0.0648	84.4	81.0	49.6-120			4.10	20
Benzo(a)anthracene	0.0800	0.0640	0.0608	80.0	76.0	46.7-125			5.17	20
Benzo(a)pyrene	0.0800	0.0690	0.0652	86.2	81.5	42.3-119			5.63	20
Benzo(b)fluoranthene	0.0800	0.0652	0.0616	81.5	77.0	43.6-124			5.71	20
Benzo(g,h,i)perylene	0.0800	0.0697	0.0661	87.1	82.6	45.1-132			5.27	20
Benzo(k)fluoranthene	0.0800	0.0779	0.0748	97.4	93.5	46.1-131			4.07	20

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

(LCS) 12/01/15 08:47 • (LCSD) 12/01/15 09:09

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	0.0715	0.0688	89.4	86.1	49.5-131			3.85	20
Dibenz(a,h)anthracene	0.0800	0.0685	0.0643	85.6	80.4	44.8-133			6.32	20
Fluoranthene	0.0800	0.0651	0.0633	81.4	79.1	49.3-128			2.81	20
Fluorene	0.0800	0.0663	0.0642	82.8	80.2	50.6-121			3.21	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0706	0.0669	88.3	83.7	46.1-135			5.33	20
Naphthalene	0.0800	0.0684	0.0646	85.5	80.7	49.6-115			5.70	20
Phenanthrene	0.0800	0.0701	0.0673	87.6	84.1	48.8-121			4.14	20
Pyrene	0.0800	0.0689	0.0657	86.1	82.1	44.7-130			4.84	20
1-Methylnaphthalene	0.0800	0.0685	0.0656	85.6	82.0	50.6-122			4.32	20
2-Methylnaphthalene	0.0800	0.0691	0.0652	86.4	81.5	50.4-120			5.88	20
2-Chloronaphthalene	0.0800	0.0696	0.0666	87.0	83.2	53.9-121			4.43	20
(S) p-Terphenyl-d14				*52.9*	*71.4*	*32.2-131*				
(S) Nitrobenzene-d5				*64.3*	*82.2*	*22.1-146*				
(S) 2-Fluorobiphenyl				*57.1*	*78.4*	*40.6-122*				

L803733-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/01/15 13:28 • (MS) 12/01/15 13:50 • (MSD) 12/01/15 14:12

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	0.00346	0.0682	0.0701	81.0	83.3	1	26.5-141			2.77	21.2
Acenaphthene	0.0800	0.0155	0.0845	0.0780	86.3	78.1	1	31.9-130			8.06	20
Acenaphthylene	0.0800	0.00548	0.0726	0.0692	83.8	79.6	1	33.7-129			4.80	20
Benzo(a)anthracene	0.0800	0.00245	0.0599	0.0610	71.8	73.2	1	18.3-136			1.86	24.6
Benzo(a)pyrene	0.0800	0.00102	0.0630	0.0647	77.5	79.7	1	16.9-135			2.71	25.2
Benzo(b)fluoranthene	0.0800	0.00151	0.0594	0.0610	72.4	74.4	1	10.0-134			2.68	30.9
Benzo(g,h,i)perylene	0.0800	0.000838	0.0596	0.0606	73.4	74.7	1	14.1-140			1.70	25.5
Benzo(k)fluoranthene	0.0800	ND	0.0618	0.0638	77.2	79.7	1	18.2-138			3.17	25.6
Chrysene	0.0800	0.00158	0.0645	0.0654	78.6	79.8	1	17.1-145			1.46	24.2
Dibenz(a,h)anthracene	0.0800	ND	0.0612	0.0614	76.5	76.8	1	18.5-138			0.300	24.3
Fluoranthene	0.0800	0.00552	0.0631	0.0645	72.0	73.7	1	15.4-144			2.09	27.1
Fluorene	0.0800	0.0305	0.105	0.0919	92.8	76.7	1	23.5-136			13.1	20
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0618	0.0623	77.2	77.9	1	14.5-142			0.840	25.8
Naphthalene	0.0800	0.389	0.605	0.424	271	43.8	1	29.2-128	V	J3	35.3	20
Phenanthrene	0.0800	0.0310	0.100	0.0913	86.4	75.3	1	20.1-134			9.30	23.6
Pyrene	0.0800	0.00716	0.0703	0.0707	78.9	79.5	1	11.0-148			0.620	26.1

L803733-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/01/15 13:28 • (MS) 12/01/15 13:50 • (MSD) 12/01/15 14:12

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	1.15	1.66	1.16	639	14.0	1	28.4-137	V	J3 V	35.6	20
2-Methylnaphthalene	0.0800	1.65	2.38	1.64	910	0.000	1	26.6-137	V	J3 V	36.6	20
2-Chloronaphthalene	0.0800	0.00751	0.0757	0.0715	85.2	79.9	1	38.6-126			5.77	20
(S) p-Terphenyl-d14					*74.9*	*77.8*		*32.2-131*				
(S) Nitrobenzene-d5					*128*	*114*		*22.1-146*				
(S) 2-Fluorobiphenyl					*81.1*	*79.6*		*40.6-122*				

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.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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.**

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
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	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 [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	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		

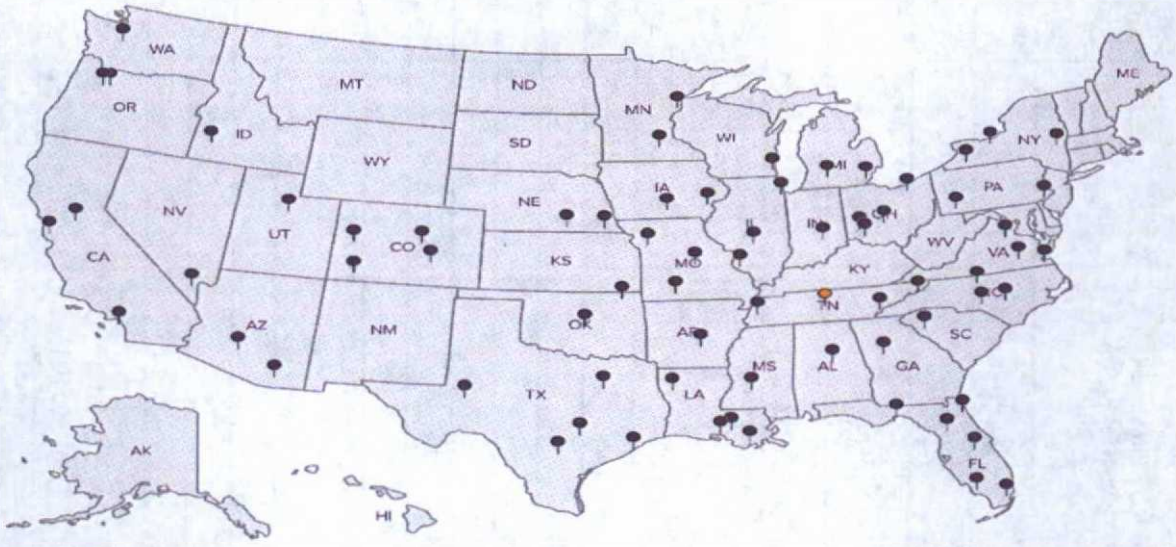
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] 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.**



Company Name/Address:	Billing Information:
Envirotech Inc. -NM 5796 US Highway 64 Farmington, NM 87401	Accounts Payable 5796 US Highway 64 Farmington, NM 87401
Report to: Lynn Cook & Tim Cain	Email To: Lynn Cook & Tim Cain
Project Description: Osprey 30-7	City/State Collected:
Phone: / Fax:	Client Project # 15090-0001 / Lab Project #
Collected by (print): John Thompson	Site/Facility ID # P511060 / P.O. # 142780
Collected by (signature):	Rush? (Lab MUST Be Notified) ___ Same Day 200% ___ Next Day 100% ___ Two Day 50% ___ Three Day 25% / Date Results Needed
Immediately Packed on Ice N___ Y✓	Email? ___No ✓Yes / FAX? ✓No ___Yes

Analysis / Container / Preservative: PAH sim by 8270 / 4oz jar / Cool

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAH sim by 8270 / 4oz jar / Cool	Rem./Contaminant	Sample # (lab only)
#1		SS		11/24/15	13:00	1	X		-01
#2						1	X		02
#3						1	X		03
#4						1	X		04

Chain of Custody Page 1 of 1

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L803408
G222

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: ENVIROFMN 10091551 (Quote)

Flow _____ Other _____

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
[signature]	11/24/15	15:51	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ ____

Temp: 3.7 °C Bottles Received: 4-40Z

Date: 11/25/15 Time: 0941

Condition: (lab use only) TF a

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:


Bridgecreek Resources Co LLC
Lease UMU 75W11038
Osprey 30-7
On Site Burial Location Marker

Osprey 30-7