

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-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NCS1525853335
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: BPX Energy	OGRID: 778	Remediation Plan
Contact Name: Steve Moskal	Contact Telephone: (505) 330-9179	
Contact email: steven.moskal@bpx.com	Incident # <i>(assigned by OCD)</i> NCS1525853335	
Contact mailing address: 1199 Main Ave. Suite 101, Durango CO, 81301		

Location of Release Source

Latitude: 36.981049° Longitude: -107.948261°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Brown Federal J 001	Site Type: Natural Gas Production Well
Date Release Discovered: April 19, 2010	API#: 30-045-29029

Unit Letter	Section	Township	Range	County
M	13	T32N	R11W	San Juan

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls): unknown	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls):	Volume Recovered (bbls): 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Condensate	Volume Released (bbls): unknown	Volume Recovered (bbls):
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:

During a below grade tank (BGT) closure on April 19, 2010, soil impacts were identified. A five-point composite sample was collected from the open excavation with laboratory results for total petroleum hydrocarbons (TPH) were determined to be above the BGT closure standards. All other analyzed contaminants of concern were below lab closure standards. BP proposes has investigated the soil impacts via vertical and lateral delineation using a hollow stem auger rig. The findings indicate remedial activity is required, but at depths where excavation is not practical. BP proposes to use in-situ, chemical injection to treat both hydrocarbons and chloride contamination.

From: [Smith, Cory, EMNRD](#)
To: [Steven Moskal - BP America \(steven.moskal@BPX.com\)](mailto:steven.moskal@BPX.com)
Subject: Brown Federal J #001 incident# nCS1525853335 Remediation Plan.
Date: Tuesday, August 25, 2020 10:00:00 AM

Steve,

OCD has reviewed the remediation plan received on 8/7/2019 for the Brown Federal J #001 incident# nCS1525853335. The OCD has approved the remediation plan with the following conditions of approval.

- BP did not completely delineate the release horizontally, Elevated Chlorides in BH3/4 BP must fully delineate the release prior to starting remediation.
- BP will submit a closure plan sampling plan prior to the collection of any confirmation closure sample.
- BP will initiate this remediation plan no later then 12/1/2020 and provide OCD an anticipated time frame for remediation.

The signed c-141 will be located in the online incident#. If you have any additional questions please give me a call.


Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Steve Moskal</u> Title: <u>Environmental Coordinator</u>	
Signature: 	Date: <u>March 11, 2019</u>
email: <u>Steven.moskal@bpx.com</u>	Telephone: <u>(505) 330-9179</u>
<u>OCD Only</u> Received by: _____ Date: _____	

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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>~33</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

<p>Characterization Report Checklist: <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.<input checked="" type="checkbox"/> Field data<input checked="" type="checkbox"/> Data table of soil contaminant concentration data<input checked="" type="checkbox"/> Depth to water determination<input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release<input checked="" type="checkbox"/> Boring or excavation logs<input type="checkbox"/> Photographs including date and GIS information<input checked="" type="checkbox"/> Topographic/Aerial maps<input checked="" type="checkbox"/> Laboratory data including chain of custody
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If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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Printed Name: Steve Moskal Title: Environmental Coordinator

Signature:  Date: August 6, 2019

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: _____ Date: _____

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Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Steve Moskal Title: Environmental Coordinator

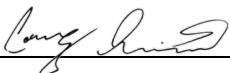
Signature:  Date: August 6, 2019

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: OCD Date: 8/7/2019

☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature:  Date: 8/25/2020

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Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

To: Cory Smith (NMOCD), Emmanuel Adeloje (BLM)
From: Steve Moskal (BP)
Date: 8/6/2019
Re: Brown Federal J 001 – In-Situ Remediation Plan
API #30-045-29029 ULSTR: (M)- S13 - T32N - R11W;
Lat. 36.981049°, Long -107.948261°

The Brown Federal J 001 site is an active natural gas production pad within the San Juan Basin Gas Field in San Juan County, New Mexico. The site on public land and located on a shared well pad with the BP operated Barnes B 021. Depth to groundwater is anticipated to be ~35' bgs (below ground surface). During a below grade tank (BGT) closure on April 19, 2010, soil impacts were identified. A five-point composite sample was collected from the open excavation with laboratory results for total petroleum hydrocarbons (TPH) were determined to be above the BGT closure standards. All other analyzed contaminants of concern were below lab closure standards. The results of the BGT closure required a subsequent investigation or remedial activity. BP investigated the soil impacts via vertical and lateral delineation using a hollow stem auger rig June 11 and 12 of 2019. The results of this activity are included in the attached documents, including a field report, bore logs and lab report.

SOIL REMEDIATION PLAN

BP proposes to gravity inject specialized remedial formulas to remediate the low level hydrocarbon and chloride contamination identified during the site delineation in June of 2019. Soil Rx and SA-1000 will be piped into the existing soil boring 1, 2, 3 and 4. Provided are the information sheets for each of the products. As indicated on the attached boring logs, soil bore holes 1-3 were completed with slotted pipe in anticipation of potential remediation. However, soil boring 4 was backfilled with cuttings from the drilling activities and will need to be re-completed with slotted pipe. BH-4 will be re-advanced using a hand auger to approximately 20' deep, with slotted PVC to be inserted from 20-5' below ground surface, with solid PVC brought to the surface. The boring will be backfilled, if necessary, with the cuttings, then be sealed with hydrated bentonite at the surface.

The two remedial formulas will be diluted to the manufacturer specifications, 10:1, with potable water and placed into aboveground tanks. The tanks will be in a bermed area for spill prevention. Piping or hose will be connected from the tank to a single boring and gravity fed, with approximately 1,000 gallons of the mixture and allowed to gravity feed into the subsurface. This will be performed on each boring, BH-1 through BH-4. The duration of the gravity feed is unknown, but will be closely monitored and controlled as needed. Initial thought is approximately 1 week per each boring, totaling approximately 4,000 gallons.

Once the remedial formula application is complete, the area will be further delineated for vertical and lateral extents. The delineation will use a hollow stem auger and borings will be approximately 10' apart and each advanced to 25' deep. During advancement of the soil borings, soil samples will be collected for laboratory confirmation. A soil sample will be collected every 5' or more frequent if possible. Two soil samples will be collected from each boring, one at the field determined highest concentrated impact zone, and one from the total depth of the boring. The concentration of impacts will be based on field screening using a calibrated photoionization detector and chloride test strips, visual observation or other apparent field observations. All collected soil samples will be submitted for laboratory analysis, following handling and chain of custody protocols, for analysis via 8015 TPH, 8021 BTEX and 300.0 chloride.

Follow up reporting or delineation will be performed within 60 days of the final lab results.

Steve Moskal



Environmental Coordinator



New Product

The Next Generation Treatment for Sodium & Heavy Metals in Soil and Wastewater

3Tier Technologies is proud to introduce a revolutionary shift in the management and remediation of high sodium and metal contaminated soils and wastewater streams. **SA-1000™** is the newest treatment that combines two, next generation, organic bio-polymers. This uniquely blended product possess the following properties and functions; optimal molecular mass, active functional groups, hydrophilic and hydrophobic sites, positively and negatively charged sites, non-ionic sites, and specific interactions between molecules themselves and organic/mineral compounds. The combination of these diverse properties and functions provide a product that utilizes multiple functions and mechanisms to detoxify, neutralize, bind, and convert a myriad of toxic metals to benign residual metals.

SA-1000™ is a convenient, cost effective, liquid treatment product derived from and naturally occurring organic substrate. Our proprietary and patented manufacturing process unleashes unparalleled performance that address most of the potential effects that excess sodium and heavy metals will have in all soil and wastewater applications.

Product Benefits:

- **SA-1000™** adsorbs and coordinates sodium cations and chlorine anions which allow excessive amounts of salt to become more mobile in terms of sodium cations and chloride anions that have a natural ability to flush through the soil or precipitate out of water. Any sodium residue creates a new mineral formation resulting in sodium, chlorine, cation and anion conversion into physically and mechanically bound status, thus eliminating salt toxicity resulting in desalination and salt toxicity reduction/ elimination.
- **SA-1000™** will naturally stimulate toxic organic and mineral pollutants decomposition into neutral compounds such as converting Chromium VI to Chromium III.
- **SA-1000™**, with an abundance of hydroxyl and phenolic groups, provides these functional groups that are key to the metal complexation resulting in the binding of various metals.
- **SA-1000™** is immediately soluble and active compared to gypsum applications. See results within a couple weeks.
- In soil, **SA-1000™** creates fresh soil organic matter that results in increased CEC, better water holding capacity, and soil porosity/structure that results in healthy, active soil for re-use.
- **SA-1000™** is a chemically, biologically and geologically active material.
- Cost effective low dose rates for either injection or mechanical applications.

For additional information and specific application rates for your project, contact an authorized 3 Tier representative.



SA-1000 - Performance Case Study

The remediation and management of waste tailings from the metals refinery industry is a growing challenge with increased regulations towards heavy metals, salts, and other related contaminants. In an effort to demonstrate the real world performance of SA-1000 and the direct impact it has on metals and salts, 3 Tier received a sample of stainless steel slag directly from a refinery to treat.

Trial Outline:

The slag sample was crushed and screened to a homogenous material with all large clumps removed. An equal amount of processed slag was added to two clean plastic dishes. One dish was treated with SA-1000 (Right Photo Below), wheat seed was added to each dish and mixed into the slag, and each dish watered. Each dish received equal amounts of water daily to aid in normal seed germination for five days.

The photo below shows plant germination after 5 days. After 10 days, the treated sample continued to grow while the untreated dish with limited initial germination all died. The trial was abandoned after 30 days with the treated sample plants remained healthy for the entire time.



Untreated Slag

SA-1000 Treated Slag

Summary:

This study has demonstrated the performance of SA-1000 and its ability to reduce/eliminate salt and metals toxicity while providing a valuable organic structure which will sustain growth. Additionally, this study has laid the foundation for a large scale pilot study for the treatment of refinery tailings. The new pilot study will include pre and post material metals and sodium testing and replicate the ability of the tailings to support various plants from seed.

3 Tier is seeking additional tailing remediation locations as well as salt and/or metal contaminated soil sites for additional performance pilot studies. Contact Daniel J Burdette at dburdette@3tier.tech or Call 877-226-7498.



Bio-Regen SA-1000

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 06/01/2017

Supersedes: 06/01/2015

Version: 1.0 Format: GHS Language: English (US)

SECTION 1: Identification

Product Identifier

Product Name Bio-Regen SA-1000

Product Name Mixture

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Details of the Supplier of the Safety Data Sheet

Manufacturer 3 Tier Technologies, LLC
250 National Place, Suite 142
Longwood, FL 32750

Telephone (General) 877-226-7498

Emergency Telephone Number

Manufacturer 407-808-4653

SECTION 2: Hazard Identification

Classification of the Substance or Mixture

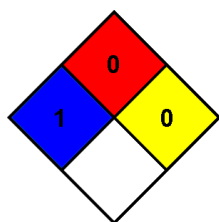
Classification (GHS-US) Not classified

Label elements No labeling applicable

Hazard Statements None

Precautionary Statements None

Other Information



NFPA Health Hazard

1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA Fire Hazard

0 - Materials that will not burn.

NFPA Reactivity

0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

Bio-Regen SA-1000

Safety Data Sheet

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SECTION 3: Composition/Information on Ingredients

Substances Material does not meet the criteria of a substance.

Mixtures

Bio-Regen SA-1000 is a blended composition "not considered hazardous" under the OSHA Hazard Communication Standard CFR Title 29 1910.1200. All ingredients appear on the EPA TSCA Inventory.

Components	CAS Number	%	Hazardous
Organic Biopolymer	1415-93-6	75	No
RO Water	7732-18-5	15	No
Urea Nitrogen	57-13-6	10	No

Ingredients of <1% have been added to a non-hazardous liquid organic substrate. Active components >5% are identified above.

See Section 11 for Toxicology Information

SECTION 4: First aid measures

Description of First Aid Measures

Inhalation Remove to fresh air and keep at rest in a comfortable position for breathing.

Skin (or clothing) Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.

Eye Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. If pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.

Ingestion Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

Most Important Symptoms and Effects, both Acute and Delayed

Refer to Section 11: Toxicological Information.

Indication of Any Medical Attention and Special Treatment Needed

Notes to Physician

All treatments should be based on observed signs and symptoms of distress in patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5: Fire-Fighting Measures

Extinguishing Media

Suitable Extinguishing Media Carbon dioxide. Dry powder. Foam

Unsuitable Extinguishing Media Not applicable.

Bio-Regen SA-1000

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Special Hazards Arising From the Substance or Mixture

Unusual Fire and Explosion Hazards Not applicable.

Hazardous Combustion Products Not applicable.

Advice for Firefighters No special firefighting equipment is needed; however, self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals.

SECTION 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Store in a safe place. Wear approved goggles when handling this product. Wash material off skin with plenty of soap and water. Wash clothing and footwear before reuse. Always wash hands thoroughly after use.

Emergency Procedures Not applicable.

Environmental Precautions

Methods and Material for Containment and Cleaning Up

Containment/Clean-Up Measures Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Place in a suitable container for disposal in a safe manner in accordance with local/national regulations.

SECTION 7: Handling and Storage

Precautions for Safe Handling

Handling Do not handle until all safety precautions have been read and understood. Avoid contact with skin, eyes and clothing. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Keep out of reach of children. Store in a dry, well-ventilated area. Keep container closed when not in use.

Incompatible Materials or Ignition Sources Caustics, oxidizers, reducers.

SECTION 8: Exposure Controls/Personal Protection

Control Parameters

Exposure Controls

Engineering Measures/Controls None specified.

Bio-Regen SA-1000

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Personal Protective Equipment



Pictograms

Respiratory

MSHA-NIOSH approved. No special precautions required.

Eye/Face

Protective eye goggles are recommended.

Hands

Wear rubber gloves for prolonged exposure; rinse completely from skin after contact.

Skin/Body

No special precautions required; rinse completely from skin after contact.

General Industrial Hygiene Considerations None specified.

Environmental Exposure Controls None specified.

SECTION 9: Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance - Description	Brown / Black Liquid
Color	Brown / Black	Odor	Natural / Earthy
Taste	Data Lacking	Particulate Type	Not relevant
Particulate Size	Not relevant	Aerosol Type	Not relevant
Odor Threshold	Data Lacking	Physical and Chemical Properties	Data Lacking
General Properties			
Boiling Point	>212°F (100°C)	Melting Point	Data Lacking
Decomposition Temperature	Data Lacking	Heat of Decomposition	Data Lacking
pH	6.0 – 8.5	Specific Gravity/Relative Density	1.01 – 1.14
Density	Data Lacking	Bulk Density	Data Lacking
Water Solubility	99%	Solvent Solubility	Not relevant
Viscosity	Equivalent to Water	Explosive Properties	Classification criteria not met.
Oxidizing Properties	Classification criteria not met.		
Volatility			
Vapor Pressure	Equivalent to Water	Vapor Density	Equivalent to Water
Evaporation Rate	Not Determined	VOC (Wt.)	Negligible
VOC (Vol.)	Data Lacking	Volatiles (Wt.)	Data Lacking
Volatiles (Vol.)	Data Lacking		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Self-Accelerating Decomposition Temperature (SADT)	Not relevant	Heat of Combustion	Not relevant
Burning Time	Not relevant	Flame Duration	Not relevant
Flame Height	Not relevant	Flame Extension	Not relevant
Ignition Distance	Not relevant	Flammability (solid, gas)	Non-flammable

Bio-Regen SA-1000

Safety Data Sheet

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Environmental			
Half-Life	Data Lacking	Octanol/Water Partition Coefficient	Data Lacking
Coefficient of Water/Oil Distribution	Data Lacking	Bioaccumulation Factor	Data Lacking
Bioconcentration Factor	Data Lacking	Biochemical Oxygen Demand BOD/BOD5	Data Lacking
Chemical Oxygen Demand	Data Lacking	Persistence	Data Lacking
Degradation	Data Lacking		

SECTION 10: Stability and Reactivity

Reactivity No dangerous reaction known under conditions of normal use.

Chemical Stability Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions None known.

Conditions to Avoid None known.

Incompatible Materials Strong oxidizing agents, alkalis.

Hazardous Decomposition Products Carbon oxides (CO, CO₂). Sulfur oxides.

SECTION 11: Toxicological Information

Information of Toxicological Effects

GHS Properties	Classification
Acute Toxicity	OSHA HCS 2012 Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 Classification criteria not met
Carcinogenicity	OSHA HCS 2012 Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 Classification criteria not met
Respiratory Sensitization	OSHA HCS 2012 Mild Irritant
Serious Eye Damage/Irritation	OSHA HCS 2012 Mild Irritant
Skin Corrosion/Irritation	OSHA HCS 2012 Classification criteria not met
Skin Sensitization	OSHA HCS 2012 Mild Irritant
STOT-RE	OSHA HCS 2012 Classification criteria not met
STOT-SE	OSHA HCS 2012 Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 Classification criteria not met

Target Organs None.

Route(s) of Entry/Exposure

Potential Health Effects

Inhalation

Acute (Immediate) May cause respiratory irritation.
Chronic (Delayed) No data available.

Bio-Regen SA-1000

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Skin

Acute (Immediate) May cause skin irritation.
Chronic (Delayed) No data available.

Eye

Acute (Immediate) Direct contact with the eyes is likely to be irritating.
Chronic (Delayed) No data available.

Ingestion

Acute (Immediate) May cause gastrointestinal irritation.
Chronic (Delayed) No data available.

SECTION 12: Ecological information

Toxicity Material data lacking.

Persistence and Degradability Material data lacking.

Bioaccumulative Potential Material data lacking.

Mobility in Soil Material data lacking.

Other Adverse Effects No studies have been found.

Other Information No data is available on the adverse effects of this material on the environment.

SECTION 13: Disposal Considerations

Waste Treatment Methods

Product Waste Dispose of content in accordance with local, regional, national, and/or international regulations.

Packaging Waste Dispose of container in accordance with local, regional, national, and/or international regulations.

SECTION 14: Transport Information

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Transport Hazard Class(es)	14.4 Packing Group	14.5 Environmental Hazards
DOT	Not applicable	(N.O.I.) Non Hazardous	Not applicable	Not applicable	Not applicable
TDG	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
IMO/IMDG	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
IATA/ICAO	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Special Precautions for User None specified.

Transport in Bulk According to

Annex II of MARPOL 73/78

Bio-Regen SA-1000

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

The IBC Code

None specified.

SECTION 15: Regulatory information

US Federal Regulations

All chemical substances in this product are listed in the EPA (Environmental Protection Agency) TSCA (Toxic Substances Control Act) Inventory.

International Regulations

No additional information available.

California Proposition 65

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

SECTION 16: Other Information

Disclaimer/Statement of Liability

The information for this safety data sheet was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual products use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the mandatory requirements of Federal, State, Provincial, or local laws. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries, or consequential damages which may result from the use of or reliance on any information contained in this form.

Soil RX "The Hydrocarbon Solution"



Product Overview Soil Rx utilizes a new approach to solving soil and water hydrocarbon contamination problems. Specifically formulated for safe, effective and environmentally friendly applications, **Soil Rx** utilizes a blend of Polyelectrolyte Enhanced Bio-Polymers, highly concentrated live, hydrocarbon-oxidizing bacteria, and a readily biodegradable natural amino acid complex consisting of a nutrient-rich extract with a broad-spectrum package of identifiable amino acids and other proteins. This triple action product works together synergistically to degrade hydrocarbons with minimal use of equipment, labor and cost. **Soil Rx** is a low-cost liquid, making it an easy-to-use, cost effective means to eliminate hydrocarbon contamination problems within various types of industry. **Soil Rx** is an excellent product to remediate hydrocarbons in soil and water. It is effective on gasoline, jet fuels, diesel fuels, grease, tar, motor oils, crude oils, organic solvents, etc.

Application Methods Soil Rx is a liquid concentrate that must be diluted prior to use. **Soil Rx** can be sprayed after dilution using standard spray application equipment including but not limited to hand sprayers, mechanical sprayers, water trucks, fire or emergency response equipment, pressure washers, aerial spray equipment, soil injection, well injection, wastewater injection, etc.

Soils Applications: Mix and saturate diluted mixture with contaminated soils thoroughly for maximum performance. For shallow/surface contamination, drench affected areas with enough dilution to fully saturate the soil using normal spray equipment or water trucks. For general contamination less than two feet, contaminated soil may require tilling or excavation to properly mix concentrate/water dilution into soils. For deeper contamination greater than two feet, product application can be applied through boring-n-pour method, soil injection, or on-site soil land farming and/or bio-piling.

Water Applications: For contaminated water such as marshes, shorelines and open water with floating hydrocarbons, apply dilution directly to the contaminated areas using appropriate spray equipment or water cannons. For wastewater systems, contact 3 Tier Technologies directly for appropriate treatment methods.

Application Rates Soil Rx must be diluted using 1 part concentrate to 10 parts clean water prior to use. Product can be diluted up to 100 parts water as directed for specific applications. Application rates are determined by level of contamination, area of application, and speed required for cleanup. Specific application rates are determined prior to sale by the manufacturer and/or distributor.

Soil: Standard application rate for contaminated soil is one gallon (5 liters) 10:1 diluted product per cubic yard (meter) of soil.

Water: Normal application rate for water applications is three gallons (12 liters) 10:1 diluted product per 1000 sq. feet (93 sq. meters) of contaminated surface area. Wastewater systems will receive application rates between 5 and 100 PPM of the average GPD or system volume.

Technical Information Soil Rx contains naturally occurring, single-celled, hydrocarbon-oxidizing microorganisms; a biodegradable natural amino acid complex consisting of a nutrient-rich extract with a broad-spectrum package of identifiable amino acids, coenzymes, and other proteins in a blend of organic bio-polymers.

Product Effectiveness: The effectiveness and "speed" of this product is determined by several factors. In general, these factors are:

Temperature: Optimum performance temperatures range from 40°F (5°C) to 98°F (36°C).

pH: Maximum performance range is 5 – 9, acceptable range is 4 – 10.

Soil Moisture: Optimum soil moisture is 15% to 20% moisture content.

Remediation Speed: Factors that influence speed of process include type, level, depth, and age of contaminants as well as method of applications, regulatory standards, and urgency.

Performance Tips: Various strategies may be used to maximize performance like application rate & frequency, the addition of aeration, and method of application.

Shelf Life: Properly stored unopened containers have a shelf life of 2 years, 1 year after opening.

Benefits: Cost Effective In-Situ Method
No Dig-N-Dump Costs for Contaminated Soils
"Green" Remediation Technology
Significant Labor & Application Cost Savings
Can be Used Through Multiple Application Methods

For more information Contact:





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

NOV 17 2010

Mr. Daniel J. Burdette
3 Tier Technologies, LLC
2302 Mercator Drive
Suite 102
Orlando, FL 32807

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

Dear Mr. Burdette,

Thank you for providing the technical product data required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, on your product "Soil Rx (aka, Bio-Regen Hydrocarbon)." After conducting our review, your data submissions have satisfied the requirements contained in Title 40 of the CFR section 300.915 of the NCP. "Soil Rx (aka, Bio-Regen Hydrocarbon)" will be listed on the NCP Product Schedule under the Bioremediation Agent category and may be authorized for use by Federal On-Scene Coordinators in accordance with 40 CFR section 300.910. The technical data for this product will be kept on file by the Office of Emergency Management Regulation and Policy Division Oil Program Center pursuant to 40 CFR section 300.920.

Enclosed are some of the relevant provisions in the NCP on restrictions regarding the listing of your product. Please note, you are required to notify the Environmental Protection Agency (EPA) of any changes in composition, formulation, handling procedures, or application of your product. Based on this notice, EPA may require retesting of the product.

Also, note that the listing of "Soil Rx (aka, Bio-Regen Hydrocarbon)" on the NCP Product Schedule does not constitute approval, certification, authorization, licensing or promotion of the product; nor does it imply compliance with any criteria or minimum standards for such agents. Failure to comply with these restrictions or the making of any improper reference to EPA in an attempt to demonstrate approval or acceptance of the product will constitute grounds for removal of the product from the schedule.

Please review the enclosed information and contact Ms. Leigh DeHaven in the Office of Emergency Management at (202) 564-1974 if you have any corrections or questions.

Sincerely,

A handwritten signature in black ink, reading "R. Craig Matthiessen", is positioned above the typed name.

R. Craig Matthiessen, Director
Regulation and Policy Development Division
Office of Emergency Management



Bio-Regen Soil Rx

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 06/01/2017

Supersedes: 06/01/2015

Version: 1.0 Format: GHS Language: English (US)

SECTION 1: Identification

Product Identifier

Product Name Bio-Regen Soil Rx

Product Name Mixture

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Details of the Supplier of the Safety Data Sheet

Manufacturer 3 Tier Technologies, LLC
250 National Place, Suite 142
Longwood, FL 32750

Telephone (General) 877-226-7498

Emergency Telephone Number

Manufacturer 407-808-4653

SECTION 2: Hazard Identification

Classification of the Substance or Mixture

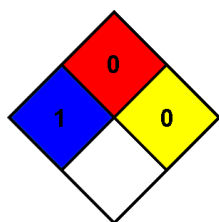
Classification (GHS-US) Not classified

Label elements No labeling applicable

Hazard Statements None

Precautionary Statements None

Other Information



NFPA Health Hazard

1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA Fire Hazard

0 - Materials that will not burn.

NFPA Reactivity

0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

Bio-Regen Soil Rx

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/Information on Ingredients

Substances Material does not meet the criteria of a substance.

Mixtures

Bio-Regen Soil Rx is a blended composition "not considered hazardous" under the OSHA Hazard Communication Standard CFR Title 29 1910.1200. All ingredients appear on the EPA TSCA Inventory. All Bacillus Bacteria contained in this product are DSL Listed and Compliant.

Components	CAS Number	%	Hazardous
Organic Biopolymer	1415-93-6	50	No
Bacillus Bacteria	ATCC 18250-7	30	No
RO Water	7732-18-5	10	No
Amino Acids	Various	10	No

Ingredients of <1% have been added to a non-hazardous liquid organic substrate. Active components >5% are identified above.

See Section 11 for Toxicology Information

SECTION 4: First aid measures

Description of First Aid Measures

Inhalation	Remove to fresh air and keep at rest in a comfortable position for breathing.
Skin (or clothing)	Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.
Eye	Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. If pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

Most Important Symptoms and Effects, both Acute and Delayed

Refer to Section 11: Toxicological Information.

Indication of Any Medical Attention and Special Treatment Needed

Notes to Physician

All treatments should be based on observed signs and symptoms of distress in patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5: Fire-Fighting Measures

Extinguishing Media

Suitable Extinguishing Media Carbon dioxide. Dry powder. Foam

Bio-Regen Soil Rx

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Unsuitable Extinguishing Media Not applicable.

Special Hazards Arising From the Substance or Mixture

Unusual Fire and Explosion Hazards Not applicable.

Hazardous Combustion Products Not applicable.

Advice for Firefighters No special firefighting equipment is needed; however, self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals.

SECTION 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Store in a safe place. Wear approved goggles when handling this product. Wash material off skin with plenty of soap and water. Wash clothing and footwear before reuse. Always wash hands thoroughly after use.

Emergency Procedures Not applicable.

Environmental Precautions

Methods and Material for Containment and Cleaning Up

Containment/Clean-Up Measures Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Place in a suitable container for disposal in a safe manner in accordance with local/national regulations.

SECTION 7: Handling and Storage

Precautions for Safe Handling

Handling Do not handle until all safety precautions have been read and understood. Avoid contact with skin, eyes and clothing. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Keep out of reach of children. Store in a dry, well-ventilated area. Keep container closed when not in use.

Incompatible Materials or Ignition Sources Caustics, oxidizers, reducers.

SECTION 8: Exposure Controls/Personal Protection

Control Parameters

Exposure Controls

Engineering Measures/Controls None specified.

Bio-Regen Soil Rx

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Personal Protective Equipment



Pictograms

Respiratory

MSHA-NIOSH approved. No special precautions required.

Eye/Face

Protective eye goggles are recommended.

Hands

Wear rubber gloves for prolonged exposure; rinse completely from skin after contact.

Skin/Body

No special precautions required; rinse completely from skin after contact.

General Industrial Hygiene Considerations None specified.

Environmental Exposure Controls None specified.

SECTION 9: Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance - Description	Brown / Black Liquid
Color	Brown / Black	Odor	Mild Citrus Odor
Taste	Data Lacking	Particulate Type	Not relevant
Particulate Size	Not relevant	Aerosol Type	Not relevant
Odor Threshold	Data Lacking	Physical and Chemical Properties	Data Lacking
General Properties			
Boiling Point	>212°F (100°C)	Melting Point	Data Lacking
Decomposition Temperature	Data Lacking	Heat of Decomposition	Data Lacking
pH	6.9 – 9.5	Specific Gravity/Relative Density	1.01 – 1.05
Density	Data Lacking	Bulk Density	Data Lacking
Water Solubility	99%	Solvent Solubility	Not relevant
Viscosity	Equivalent to Water	Explosive Properties	Classification criteria not met.
Oxidizing Properties	Classification criteria not met.		
Volatility			
Vapor Pressure	Equivalent to Water	Vapor Density	Equivalent to Water
Evaporation Rate	Not Determined	VOC (Wt.)	Negligible
VOC (Vol.)	Data Lacking	Volatiles (Wt.)	Data Lacking
Volatiles (Vol.)	Data Lacking		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Self-Accelerating Decomposition Temperature (SADT)	Not relevant	Heat of Combustion	Not relevant
Burning Time	Not relevant	Flame Duration	Not relevant
Flame Height	Not relevant	Flame Extension	Not relevant
Ignition Distance	Not relevant	Flammability (solid, gas)	Non-flammable

Bio-Regen Soil Rx

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Environmental			
Half-Life	Data Lacking	Octanol/Water Partition Coefficient	Data Lacking
Coefficient of Water/Oil Distribution	Data Lacking	Bioaccumulation Factor	Data Lacking
Bioconcentration Factor	Data Lacking	Biochemical Oxygen Demand BOD/BOD5	Data Lacking
Chemical Oxygen Demand	Data Lacking	Persistence	Data Lacking
Degradation	Data Lacking		

SECTION 10: Stability and Reactivity

Reactivity No dangerous reaction known under conditions of normal use.

Chemical Stability Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions None known.

Conditions to Avoid None known.

Incompatible Materials Strong oxidizing agents, alkalis.

Hazardous Decomposition Products Carbon oxides (CO, CO₂). Sulfur oxides.

SECTION 11: Toxicological Information

Information of Toxicological Effects

GHS Properties	Classification
Acute Toxicity	OSHA HCS 2012 Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 Classification criteria not met
Carcinogenicity	OSHA HCS 2012 Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 Classification criteria not met
Respiratory Sensitization	OSHA HCS 2012 Mild Irritant
Serious Eye Damage/Irritation	OSHA HCS 2012 Mild Irritant
Skin Corrosion/Irritation	OSHA HCS 2012 Classification criteria not met
Skin Sensitization	OSHA HCS 2012 Mild Irritant
STOT-RE	OSHA HCS 2012 Classification criteria not met
STOT-SE	OSHA HCS 2012 Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 Classification criteria not met

Target Organs None.

Route(s) of Entry/Exposure

Potential Health Effects

Inhalation

Acute (Immediate) May cause respiratory irritation.
Chronic (Delayed) No data available.

Bio-Regen Soil Rx

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Skin

Acute (Immediate) May cause skin irritation.
Chronic (Delayed) No data available.

Eye

Acute (Immediate) Direct contact with the eyes is likely to be irritating.
Chronic (Delayed) No data available.

Ingestion

Acute (Immediate) May cause gastrointestinal irritation.
Chronic (Delayed) No data available.

SECTION 12: Ecological information

Toxicity Material data lacking.

Persistence and Degradability Material data lacking.

Bioaccumulative Potential Material data lacking.

Mobility in Soil Material data lacking.

Other Adverse Effects No studies have been found.

Other Information No data is available on the adverse effects of this material on the environment.

SECTION 13: Disposal Considerations

Waste Treatment Methods

Product Waste Dispose of content in accordance with local, regional, national, and/or international regulations.

Packaging Waste Dispose of container in accordance with local, regional, national, and/or international regulations.

SECTION 14: Transport Information

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Transport Hazard Class(es)	14.4 Packing Group	14.5 Environmental Hazards
DOT	Not applicable	(N.O.I.) Non Hazardous	Not applicable	Not applicable	Not applicable
TDG	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
IMO/IMDG	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
IATA/ICAO	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Special Precautions for User None specified.

Transport in Bulk According to

Annex II of MARPOL 73/78

Bio-Regen Soil Rx

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

The IBC Code

None specified.

SECTION 15: Regulatory information

US Federal Regulations

All chemical substances in this product are listed in the EPA (Environmental Protection Agency) TSCA (Toxic Substances Control Act) Inventory.

International Regulations

No additional information available.

California Proposition 65

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

SECTION 16: Other Information

Disclaimer/Statement of Liability

The information for this safety data sheet was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual products use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the mandatory requirements of Federal, State, Provincial, or local laws. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries, or consequential damages which may result from the use of or reliance on any information contained in this form.

BPX ENERGY INC.

(Formerly BP America Production Company)

Well Site: Brown Federal J 001

API #: 30-045-29029

Unit Letter M, Section 13, T32N, R12W, NMPM

Soil Impacts Discovered Beneath 45 barrel Below-grade Tank (BGT)

1. **April 2010** - BGT confirmation sampling was conducted. The five (5) point composite sample (**5pcs**) failed BGT closure plan Total Petroleum Hydrocarbon (**TPH**) standard for Method 418.1 (894 milligram per kilogram (**mg/Kg**); standard - 100 mg/Kg). TPH Method 8015B was also analyzed and recorded 546 mg/Kg. New Mexico Oil Conservation Division (**NMOCD**) Spill & Release Guidelines TPH closure standard is 100 mg/Kg and based on depth to water being less than 50 feet according to the adjacent site (Barnes B 021) BGT permit information.
2. **July 2015** - BP submitted BGT closure reports to the NMOCD District III Office in Aztec, NM.
3. **March 2019** - BPX submitted Delineation Plan to NMOCD per 19.15.29 NMAC.
4. **June 2019** - BPX contracted HRL Compliance Solution to complete five (5) borings in and around 45 BGT location. Field-lab summary, aerial map showing boring locations, bore hole logs, and corresponding lab reports are attached.

CLIENT: BP

BLAGG ENGINEERING, INC.
P.O. BOX 87, BLOOMFIELD, NM 87413
(505) 632-1199

API #: 3004529029

FIELD REPORT:

BGT CONFIRMATION TEMP. PIT CLOSURE / RELEASE INVESTIGATION
(other)

PAGE No: 1 of 1

SITE INFORMATION:

SITE NAME: BROWN FEDERAL J # 1

QUAD/UNIT: M SEC: 13 TWP: 32N RNG: 11W PM: NM CNTY: SJ ST: NM

QTR-QTR/FOOTAGE: 1,255'S/670'W SW/SW LEASE TYPE: FEDERAL STATE / FEE / INDIAN

LEASE #: SF078039 PROD. FORMATION: MV CONTRACTOR: ELKHORN

DATE STARTED: 04/13/10

DATE FINISHED:

ENVIRONMENTAL SPECIALIST: JCB

REFERENCE POINT:

WELL HEAD (W.H.) GPS COORD.: 36.98131 X 107.94786 GL ELEV.: 6,223'

1) 45 BGT (SW/DB) GPS COORD.: 36.98106 X 107.94830 DISTANCE/BEARING FROM W.H.: 153', S50W

2) 21 BGT (SW/DB) GPS COORD.: 36.98143 X 107.94820 DISTANCE/BEARING FROM W.H.: 105', N55W

3) GPS COORD.: DISTANCE/BEARING FROM W.H.:

4) GPS COORD.: DISTANCE/BEARING FROM W.H.:

5) GPS COORD.: DISTANCE/BEARING FROM W.H.:

LAB INFORMATION:

CHAIN OF CUSTODY RECORD(S): ENVIROTECH

1) SAMPLE ID: 45 BGT 5-pt. @ 6' SAMPLE DATE: 04/13/10 SAMPLE TIME: 1450 LAB ANALYSIS: 418.1/8015/8021/4500B (CI) OVM READING: NA

2) 21 BGT 5 pt. @ 6' SAMPLE DATE: 04/13/10 SAMPLE TIME: 1500 LAB ANALYSIS: 418.1/8015/8021/4500B (CI) NA

3) SAMPLE ID: SAMPLE DATE: SAMPLE TIME: LAB ANALYSIS:

4) SAMPLE ID: SAMPLE DATE: SAMPLE TIME: LAB ANALYSIS:

5) SAMPLE ID: SAMPLE DATE: SAMPLE TIME: LAB ANALYSIS:

SOIL DESCRIPTION:

SOIL TYPE: SAND SILTY SAND SILT / SILTY CLAY / CLAY / GRAVEL / OTHER

SOIL COLOR: DARK YELLOWISH ORANGE - BROWN

COHESION (ALL OTHERS): NON COHESIVE SLIGHTLY COHESIVE / COHESIVE / HIGHLY COHESIVE

CONSISTENCY (NON COHESIVE SOILS): LOOSE FIRM / DENSE / VERY DENSE

PLASTICITY (CLAYS): NON PLASTIC / SLIGHTLY PLASTIC / COHESIVE / MEDIUM PLASTIC / HIGHLY PLASTIC

DENSITY (COHESIVE CLAYS & SILTS): SOFT / FIRM / STIFF / VERY STIFF / HARD

MOISTURE: DRY SLIGHTLY MOIST MOIST / WET / SATURATED / SUPER SATURATED

ADDITIONAL COMMENTS:

DISCOLORATION/STAINING OBSERVED: YES NO EXPLANATION - SAMPLE COLLECTED FROM 45 ONLY.

HC ODOR DETECTED: YES NO EXPLANATION - SAMPLE COLLECTED FROM 45 ONLY.

SAMPLE TYPE: GRAB COMPOSITE # OF PTS. 5

EXCAVATION DIMENSIONS (if applicable): NA ft. X NA ft. X NA ft. cubic yards excavated (if applicable): NA

SITE SKETCH

OVM CALIB. READ. = ppm RF = 0.52

OVM CALIB. GAS = ppm

TIME: am/pm DATE:

WELL HEAD

BERM

PROD. TANKS

WOODEN R.W.

FENCE

COMPRESSOR

(45) PBGTL T.B. ~ 6' B.G.

X - S.P.D.

PLOT PLAN circle: Attached

MISCELL. NOTES

WO: N575727

PO: ZANDECALSL

SW - SINGLE WALLED

DB - DOUBLE BOTTOM

45 BGT - SIDEWALLS VISIBLE

21 BGT - SIDEWALLS NOT VISIBLE

MAGNETIC DECLINATION @ 10° E

NOTES: BGT = BELOW-GRADE TANK; E.D. = EXCAVATION DEPRESSION; B.G. = BELOW GRADE; B = BELOW; T.H. = TEST HOLE; ~ = APPROX.; T.B. = TANK BOTTOM; PBGTL = PREVIOUS BELOW-GRADE TANK LOCATION; SPD = SAMPLE POINT DESIGNATION; R.W. = RETAINING WALL

TRAVEL NOTES: CALLOUT: ONSITE: 04/13/10

revised: 03/23/10 BEI1005E.SKF

505-947-9900

BP AMERICA PRODUCTION COMPANY
BROWN FEDERAL J 001
API 3004529029 LEASE NMSF078039
1255 FSL 670 FWL (M) SEC 13 T32N R11W
SAN JUAN COUNTY ELEV 6223
LAT 36° 58' 52.320"
LONG 107° 56' 54.168"

Previous 45 bbl
BGT Position

45

BP - Brown Fed J 1

Imagery: 03/15/2015

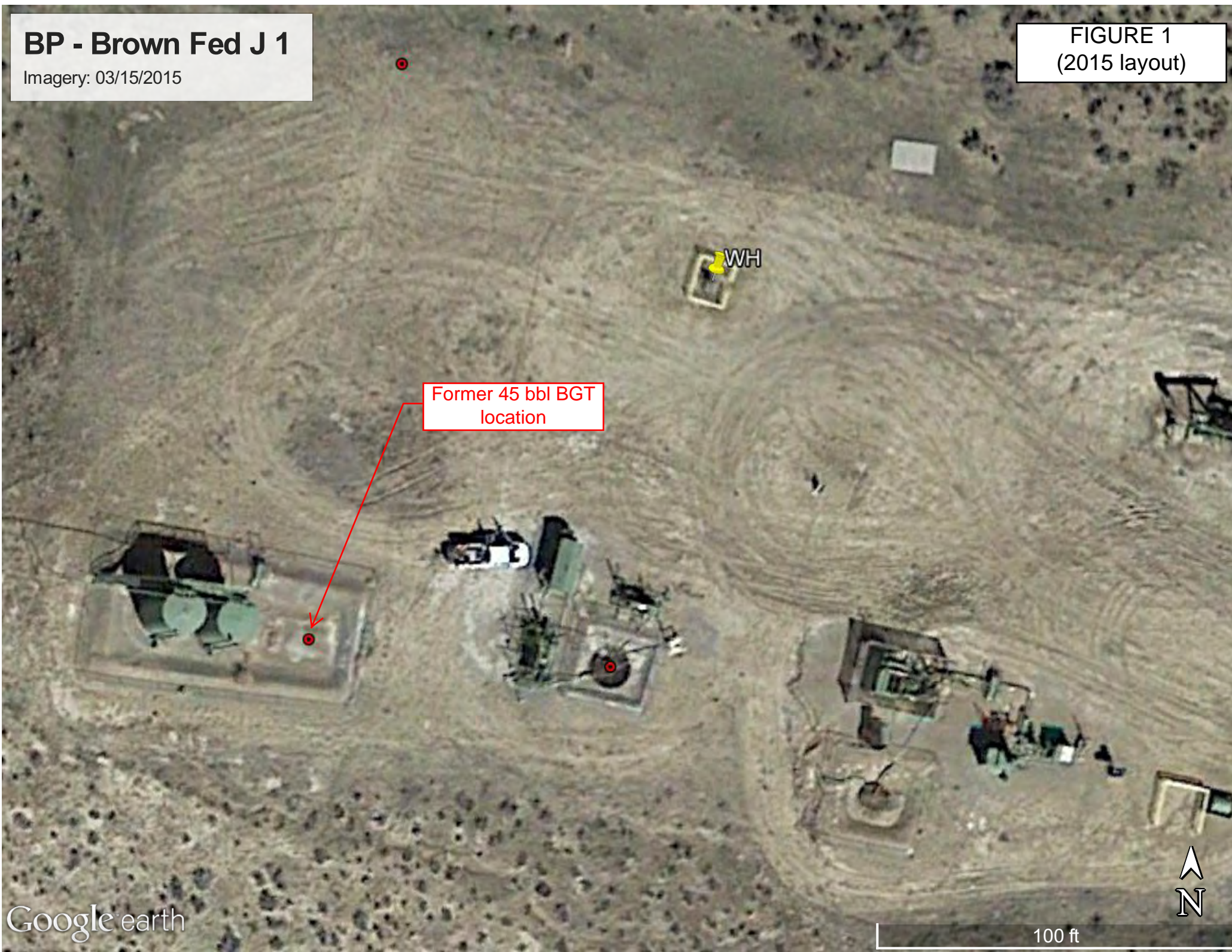
FIGURE 1
(2015 layout)

Former 45 bbl BGT
location

WH

N

100 ft



BPX - BROWN FED. J 1

(M) Section 13, T32N, R11W

API #: 3004529029

Imagery date: 4/6/2019

WH BGT GPS Coord.: 36.981321,-107.947885

Former 45 BGT
@ BH1 Location

BH4

BH5

BH3

BH2

WH

N

100 ft

BPX ENERGY INC. (Formerly BP America Production Company)

Well site: Brown Federal J # 1

API #: 30-045-29029

Unit M, Sec. 13, T32N, R12W

Impacted Soils Discovered beneath 45 bbl Below-grade Tank

SAMPLE ID	SAMPLE DATE	SAMPLE TIME	GRAB / COMPOSITE	FIELD OVM READING (ppm)	TPH - gasoline range (mg/Kg)	TPH - diesel range (mg/Kg)	TPH - diesel range (mg/Kg)	TPH - cumulative (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl - benzene (mg/Kg)	Total Xylenes (mg/Kg)	BTEX - cumulative (mg/Kg)	Chloride (mg/Kg)
BH1 @ 5' (45 BGT)	06/11/19	0936	Grab	557	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH1 @ 10' (45 BGT)	06/11/19	0941	Grab	2,634	765	1,680	ND	2,445	ND	0.406	3.99	125	129.4	ND
BH1 @ 15' (45 BGT)	06/11/19	0951	Grab	2,527	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH1 @ 20' (45 BGT)	06/11/19	0958	Grab	1,274	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH1 @ 25' (45 BGT)	06/11/19	1006	Grab	7.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	514
BH1 @ 30' (45 BGT)	06/11/19	1016	Grab	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	144
BH2 @ 5' (45 BGT)	06/11/19	1139	Grab	2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH2 @ 10' (45 BGT)	06/11/19	1146	Grab	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH2 @ 15' (45 BGT)	06/11/19	1153	Grab	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	93.7
BH2 @ 20' (45 BGT)	06/11/19	1230	Grab	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH2 @ 25' (45 BGT)	06/11/19	1238	Grab	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	394
BH3 @ 5' (45 BGT)	06/11/19	1344	Grab	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH3 @ 10' (45 BGT)	06/11/19	1350	Grab	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH3 @ 15' (45 BGT)	06/11/19	1358	Grab	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	746
BH3 @ 20' (45 BGT)	06/11/19	1407	Grab	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH3 @ 25' (45 BGT)	06/11/19	1417	Grab	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	924
BH4 @ 5' (45 BGT)	06/11/19	1504	Grab	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4 @ 10' (45 BGT)	06/11/19	1508	Grab	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4 @ 15' (45 BGT)	06/11/19	1514	Grab	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	49.8
BH4 @ 20' (45 BGT)	06/11/19	1527	Grab	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,140
BH4 @ 5' (45 BGT)	06/12/19	0824	Grab	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4 @ 10' (45 BGT)	06/12/19	0829	Grab	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	35.1
BH4 @ 15' (45 BGT)	06/12/19	0835	Grab	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4 @ 20' (45 BGT)	06/12/19	0841	Grab	0.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	529
NMOC Release Closure Standards -					-	-	-	-	100	10	-	-	50	600

Notes:

OVM - Organic vapor meter or photo-ionization detector (PID).
 TPH - Total petroleum hydrocarbons by US EPA Method 8015B.
 BTEX - Benzene, toluene, ethylbenzene, total xylenes by US EPA Method 8021B.
 ppm - Parts per million.
 mg/Kg - Milligram per kilogram (mg/Kg).
 NA - Not available or applicable.
 NMOC - New Mexico Oil Conservation Division.

06/11/19

OVM calibration reading = 100.4 ppm
 @ time - 1025 ; Response Factor - 1.00
 Calibration gas : 100 ppm Isobutylene

06/12/19

OVM calibration reading = 100.3 ppm
 @ time - 0855 ; Response Factor - 1.00
 Calibration gas : 100 ppm Isobutylene

BH1 - installed 2 inch PVC - casing between 0.5' above grade to 5' below grade; 0.010 slotted screen between 5' - 25' below grade.

BH2 - installed 2 inch PVC - casing between 0.5' above grade to 5' below grade; 0.010 slotted screen between 5' - 15' below grade, casing between 15' - 25' below grade.

BH3 - installed 2 inch PVC - casing between 0.5' above grade to 5' below grade; 0.010 slotted screen between 5' - 15' below grade, casing between 15' - 25' below grade.

Field Boring Log

Project ID: BROWN FEDERAL J #1Client: BPxDrilling Contractor: HALDrilling Equipment: TRACK MOUNTED CME-55Date Start: 6/11/19 Date Finish: 6/11/19 Driller: KP Logged by: JBTotal Depth: 36' Casing Type/Size: PVC - 2" Slot Size: 0.010Comments: LOCATED @ BGT CENTER

Depth (Feet)	Sample Time	Sample Type	Field OVM	Well Completion	SAMPLE DESCRIPTION
1	0932	Cuttings			START DRILLING
2				2 1/2'	Silty sand, Dark Tan, Moist, NO/NS (Backfill)
3				4'	BENTONITE
4					
5					
6	0936	S.S. Cuttings	557	SAND	Recover 8", Silty sand, Black stain, odor
7					Gray silty sand, HC odor, Moist
8					
9					
10					
11	0941	S.S. Cuttings	2634		Recover 21", SAA
12					
13					SAA
14					
15					
16	0952	S.S. Cuttings	2527		Recover 20", SAA, silt (Gray, HC odor) moist
17					
18					SAA
19					
20					
21	0958	S.S. Cuttings	1274		Recover 23", clayey silt, Dark Brown, moist with Gray streaks.
22					
23					
24					
25				25'	
26	1006	S.S. Cuttings	7.5	COMPACTED 12:30	Recover 21", silt to sandy silt, Dark Brown, moist, NO/NS.
27					
28					
29					
30					
31	1016	S.S. Cuttings	2.8		Recover 20", SAA.
32					
33					

← LAB

LAB

← LAB

← LAB

NS - NO STRAINING
 SAA - SAME AS ABOVE

HC - HYDROCARBON
 NO - NO ODOOR (HYDROCARBON)

BLAGG ENGINEERING, INC.

Boring ID: BH2Page: 1 of 1

Field Boring Log

Project ID: BROWN FED J. #1Client: BPXDrilling Contractor: HRL COMPLIANCE SOLN.Drilling Equipment: TRACKED CME-55Date Start: 6/11/19 Date Finish: 6/11/19 Driller: KP Logged by: NVTotal Depth: 25' Casing Type/Size: PVC 2" Slot Size: 0.010

Comments:

Depth (Feet)	Sample Time	Sample Type	Field OVM	Well Completion	SAMPLE DESCRIPTION
1	1136	CUTWSS			START DRILLING SILTY SAND - SILT, DRY - MOIST, NO STRAINING/NO ODOR
2				2 1/2'	
3				4'	BENTONITE
4					(HYDROCARBON)
5	1137		2.2		
6	1139	SS	2.2	SAND 4'-25'	RECOVERED 22" DYO SILTY SAND - SILT, DRY - MOIST, NO ODOR/NS
7	BLOWS 16				
8					
9					
10					
11	1146	SS	0.4		RECOVERED 17" SAND PARTING INTO SILTY SAND - SILT (MOD. BRN)
12	BLOWS 13				
13					
14					
15					
16	1153	SS	0.9		RECOVERED 17.5" MOD. BRN. SILT - SILTY CLAY INCREASED MOISTURE, NO STRAINING/NO ODOR, SLIGHTLY PLASTIC
17	BLOWS 11				
18					
19					
20					
21	1230	SS	0.1		RECOVERED 24" DYO SILTY CLAY/CLAYE MIX, LESS MOISTURE THAN 15', NO ODOR/NS, MED. PLASTIC
22	BLOWS 13				
23					
24					
25					
26	1238	SS	0.1	COMPLETED 1320	RECOVERED 20.5" MOD. BRN. SILTY - SILTY CLAY, SLIGHTLY MOIST, NO ODOR, NO STRAINING PLASTIC
27	BLOWS 15				
28					
29					
30					

← LAB

← LAB

DYO - DARK YELLOWISH ORANGE
 MOD. BRN - MODERATE BROWN
 MED. - MEDIUM

Field Boring Log

Project ID: BROWN FED. J#1Client: BPXDrilling Contractor: HRL COMPLIANCE SOLN.Drilling Equipment: TRACKED CME-55Date Start: 6/11/19 Date Finish: 6/11/19 Driller: KP Logged by: NVTotal Depth: 25 Casing Type/Size: PVC-2" Slot Size: 0.010

Comments:

Depth (Feet)	Sample Time	Sample Type	Field OVM	Well Completion	SAMPLE DESCRIPTION
1	1338 1340	CUTTINGS			START DRILLING MOD. BRN MOD. BRN SILTY SAND
2				2 1/2'	1ST 2" HARD OLD BLACK/GRAY IMPACTED SOILS, AFTERWARD SA BHZ
3					
4				4'	BENTONITE
5					
6	1344		0.9	SAND	RECOVERED 20.5" SA BHZ C 5'
7	blows 14				
8					
9					
10					
11	850		0.5		RECOVERED 19.5" SA BHZ C 10'
12	blows 10				
13					
14					
15					
16	1338		2.3		RECOVERED 16.5" SA BHZ C 15'
17	blows 10				
18					
19					
20					
21	1407		0.0		RECOVERED 24" SA BHZ EXCEPT MOD. BRN
22	blows 16				
23					
24					
25					
26	1417		0.1	COMPLETE RECOVERED 1455	21" SA BHZ C 25'
27	blows 11				
28					
29					
30					

MOD BRN - MODERATE BROWN
SA - SAME AS

Field Boring Log

Project ID: BROWN FED. J #1Client: BPXDrilling Contractor: HBL COMPLIANCE SOLN.Drilling Equipment: TRACKED CME-55Date Start: 6/11/19 Date Finish: 6/11/19 Driller: KP Logged by: N.V.Total Depth: 20' Casing Type/Size: NA Slot Size: NA

Comments:

Depth (Feet)	Sample Time	Sample Type	Field OVM	Well Completion	SAMPLE DESCRIPTION
1	1504	CUTTINGS		NONE	START DRILLING SILTY SAND - SILET, DRY -
2				FILED	MOIST, NO ODOR (NS, MOD. BRN
3				AUGER	↓
4				HOLE	(HYDROCARBON)
5				WITH	
6	1508		0.4	CUTTINGS	RECOVERED 18.5" MOD. BRN SAA EXCEPT
7	BLOWS			REMOVED	INCREASE IN MOISTURE
8	14				
9					
10					
11	1514		0.7		RECOVERED 24" DYO SAND PHASING INTO
12	BLOWS				SILTY SILET, SLIGHTLY MORE
13	10				MOISTURE
14					
15					
16	1520		1.1		RECOVERED 16.5" MOD. BRN SILT + SILTY
17	BLOWS				CLAY, MED. PLASTIC, NO ODOR,
18	14				NS
19					
20					
21	1527		0.4		RECOVERED 19.5" DYS SILTY CLAY/
22	BLOWS				CAULKE MIX, SLIGHTLY
23	17				MOIST, MED PLASTIC, NO ODOR
24					NS
25					
26					
27					
28					
29					
30					

← LAB





← LAB

NS - NO STAINING
 MOD. BRN - MODERATE BROWN
 MED - MEDIUM

SAA - SAME AS ABOVE
 DYO - DARK YELLOWISH ORANGE
 DYS - DARK YELLOWISH BROWN

Field Boring Log

Project ID: BROWN FED. J #1Client: BPXDrilling Contractor: HRL COMPLIANCE SOLN.Drilling Equipment: Date Start: 6/12/19 Date Finish: 6/12/19 Driller: KP Logged by: NJTotal Depth: NA Casing Type/Size: NA Slot Size: NAComments:

Depth (Feet)	Sample Time	Sample Type	Field OVM	Well Completion	SAMPLE DESCRIPTION
1	8:20	CUTtings			START DRILLING SA BH2,3,4
2					
3					
4					
5					
6	8:24		0.0		RECOVERED 24" SA BH2,3,4
7	BLOWS				
8	16				
9					
10					
11	8:29		0.5		RECOVERED 9.5" SA BH2,3,4
12	BLOWS				
13	10				
14					
15					
16	8:35		0.0		RECOVERED 13" SA BH2,3,4
17	BLOWS				
18	14				
19					
20					
21	8:41		0.0		RECOVERED 17.5" SA BH2,3,4
22	BLOWS				
23	22				
24					
25					
26					
27					
28					
29					
30					

← LA

← LAB

SA - SAME AS

Analytical Report

Report Summary

Client: BP America Production Co.

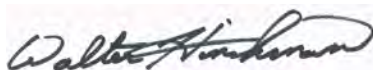
Samples Received: 6/12/2019

Job Number: 03143-0424

Work Order: P906058

Project Name/Location: Brown Federal J #1

Report Reviewed By:



Date: 6/19/19

Walter Hinchman, Laboratory Director



Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.
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Envirotech, Inc, currently holds the appropriate and available Utah TNI certification NM009792018-1 for the data reported.

BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
BH 1@ 10' (45 BGT)	P906058-01A	Soil	06/11/19	06/12/19	Glass Jar, 4 oz.
BH 1@ 25' (45 BGT)	P906058-02A	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.
BH 1@ 30' (45 BGT)	P906058-03A	Soil	06/11/19	06/12/19	Glass Jar, 4 oz.
BH 2@ 15' (45 BGT)	P906058-04A	Soil	06/11/19	06/12/19	Glass Jar, 4 oz.
BH 2@ 25' (45 BGT)	P906058-05A	Soil	06/11/19	06/12/19	Glass Jar, 4 oz.
BH 3@ 15' (45 BGT)	P906058-06A	Soil	06/11/19	06/12/19	Glass Jar, 4 oz.
BH 3@ 25' (45 BGT)	P906058-07A	Soil	06/11/19	06/12/19	Glass Jar, 4 oz.
BH 4 @ 15' (45 BGT)	P906058-08A	Soil	06/11/19	06/12/19	Glass Jar, 4 oz.
BH 4 @ 20' (45 BGT)	P906058-09A	Soil	06/11/19	06/12/19	Glass Jar, 4 oz.
BH 5 @ 10' (45 BGT)	P906058-10A	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.
BH 5 @ 20' (45 BGT)	P906058-11A	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.

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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 1@ 10' (45 BGT)
P906058-01 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	0.406	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	3.99	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	103	0.500	mg/kg	10	1924042	06/13/19	06/19/19	EPA 8021B	
o-Xylene	21.4	0.250	mg/kg	10	1924042	06/13/19	06/19/19	EPA 8021B	
Total Xylenes	125	0.250	mg/kg	10	1924042	06/13/19	06/19/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		<i>103 %</i>		<i>50-150</i>	<i>1924042</i>	<i>06/13/19</i>	<i>06/17/19</i>	<i>EPA 8021B</i>	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	1680	125	mg/kg	5	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	250	mg/kg	5	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		<i>693 %</i>		<i>50-200</i>	<i>1924045</i>	<i>06/13/19</i>	<i>06/18/19</i>	<i>EPA 8015D</i>	<i>Surr2</i>

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	765	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		<i>123 %</i>		<i>50-150</i>	<i>1924042</i>	<i>06/13/19</i>	<i>06/17/19</i>	<i>EPA 8015D</i>	

Anions by 300.0/9056A

Chloride	ND	20.0	mg/kg	1	1925010	06/18/19	06/18/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 1@ 25' (45 BGT)
P906058-02 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		97.0 %		50-150	1924042	06/13/19	06/17/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		101 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		104 %		50-150	1924042	06/13/19	06/17/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	514	20.0	mg/kg	1	1925010	06/18/19	06/18/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 1@ 30' (45 BGT)
P906058-03 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/19/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/19/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/19/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/19/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/19/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/19/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		96.8 %		50-150	1924042	06/13/19	06/19/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		100 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/19/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		104 %		50-150	1924042	06/13/19	06/19/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	144	20.0	mg/kg	1	1925010	06/18/19	06/18/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 2@ 15' (45 BGT)
P906058-04 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.9 %		50-150	1924042	06/13/19	06/17/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		103 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		104 %		50-150	1924042	06/13/19	06/17/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	93.7	20.0	mg/kg	1	1925010	06/18/19	06/19/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 2@ 25' (45 BGT)
P906058-05 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		97.4 %		50-150	1924042	06/13/19	06/17/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		102 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		105 %		50-150	1924042	06/13/19	06/17/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	394	20.0	mg/kg	1	1925010	06/18/19	06/19/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 3@ 15' (45 BGT)
P906058-06 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		98.7 %		50-150	1924042	06/13/19	06/17/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		103 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		105 %		50-150	1924042	06/13/19	06/17/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	746	20.0	mg/kg	1	1925010	06/18/19	06/19/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 3@ 25' (45 BGT)
P906058-07 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		99.4 %		50-150	1924042	06/13/19	06/17/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		103 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		105 %		50-150	1924042	06/13/19	06/17/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	924	20.0	mg/kg	1	1925010	06/18/19	06/19/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 4 @ 15' (45 BGT)
P906058-08 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		100 %		50-150	1924042	06/13/19	06/17/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		103 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		103 %		50-150	1924042	06/13/19	06/17/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	49.8	20.0	mg/kg	1	1925010	06/18/19	06/19/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 4 @ 20' (45 BGT)
P906058-09 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		100 %		50-150	1924042	06/13/19	06/17/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		102 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		103 %		50-150	1924042	06/13/19	06/17/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	1140	20.0	mg/kg	1	1925010	06/18/19	06/19/19	EPA 300.0/9056A	
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BP America Production Co.	Project Name: Brown Federal J #1	
PO Box 22024	Project Number: 03143-0424	Reported:
Tulsa OK, 74121-2024	Project Manager: Steve Moskal	06/19/19 17:27

BH 5 @ 10' (45 BGT)
P906058-10 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		100 %		50-150	1924042	06/13/19	06/17/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		100 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/17/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		104 %		50-150	1924042	06/13/19	06/17/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	35.1	20.0	mg/kg	1	1925010	06/18/19	06/19/19	EPA 300.0/9056A	
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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

BH 5 @ 20' (45 BGT)
P906058-11 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/18/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/18/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/18/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924042	06/13/19	06/18/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924042	06/13/19	06/18/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924042	06/13/19	06/18/19	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		101 %		50-150	1924042	06/13/19	06/18/19	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924045	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: n-Nonane</i>		104 %		50-200	1924045	06/13/19	06/18/19	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924042	06/13/19	06/18/19	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		102 %		50-150	1924042	06/13/19	06/18/19	EPA 8015D	

Anions by 300.0/9056A

Chloride	529	20.0	mg/kg	1	1925010	06/18/19	06/19/19	EPA 300.0/9056A	
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Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

Project Information

Chain of Custody

Page 2 of 2

Client: **BPX ENERGY INC.**
 Project: **BROWN FEDERAL J #1**
 Project Manager: **STEVE MOSKAL**
 Address: **(BPX ON RECORD)**
 City, State, Zip
 Phone: **505.330.9179/505.320.1183**
 Email: **SEE ADDITIONAL INSTRUCTIONS**

Report Attention

Report due by:

Attention:

Address:

City, State, Zip

Phone:

Email:

Lab Use Only

TAT

EPA Program

Lab WO#

Job Number

1D 3D

RCRA

CWA

SDWA

P006058

03143-0421

Analysis and Method

State

NM CO UT AZ

✓

Remarks

Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TPH 418.1							
0829	6/12/19	SOIL	1-4oz	BH5 @ 10' (45 BGT)	10	X	X	X			X								
0841	6/12/19	SOIL	1-4oz	BH5 @ 20' (45 BGT)	11	X	X	X			X								

Additional Instructions: EMAIL TO: STEVE MOSKAL, JEFF BLAGG, NELSON VELEZ
 vis ice in cooler - vj

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: NELSON VELEZ

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.

Relinquished by: (Signature) <u>[Signature]</u>	Date 6/12/19	Time 11:00	Received by: (Signature) <u>[Signature]</u>	Date 6/12/19	Time 11:00	Lab Use Only
Relinquished by: (Signature) <u>[Signature]</u>	Date 6/12/19	Time 11:41	Received by: (Signature) <u>[Signature]</u>	Date 06-12-19	Time 11:41	Received on ice: <u>(Y)</u> N
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other						T1 4.0 T2 T3
Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA						AVG Temp °C 4.0

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Brown Federal J #1
Project Number: 03143-0424
Project Manager: Steve Moskal

Reported:
06/19/19 17:27

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
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Batch 1924042 - Purge and Trap EPA 5030A

Blank (1924042-BLK1)

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							

Surrogate: 4-Bromochlorobenzene-PID 7.81 " 8.00 97.6 50-150

LCS (1924042-BS1)

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Benzene	4.53	0.0250	mg/kg	5.00		90.7	70-130			
Toluene	4.96	0.0250	"	5.00		99.2	70-130			
Ethylbenzene	4.95	0.0250	"	5.00		98.9	70-130			
p,m-Xylene	10.2	0.0500	"	10.0		102	70-130			
o-Xylene	4.94	0.0250	"	5.00		98.7	70-130			
Total Xylenes	15.1	0.0250	"	15.0		101	70-130			

Surrogate: 4-Bromochlorobenzene-PID 7.84 " 8.00 98.0 50-150

Matrix Spike (1924042-MS1)

Source: P906058-02

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Benzene	4.02	0.0250	mg/kg	5.00	ND	80.3	54.3-133			
Toluene	4.42	0.0250	"	5.00	ND	88.4	61.4-130			
Ethylbenzene	4.43	0.0250	"	5.00	ND	88.6	61.4-133			
p,m-Xylene	9.14	0.0500	"	10.0	ND	91.3	63.3-131			
o-Xylene	4.43	0.0250	"	5.00	ND	88.6	63.3-131			
Total Xylenes	13.6	0.0250	"	15.0	ND	90.4	63.3-131			

Surrogate: 4-Bromochlorobenzene-PID 7.81 " 8.00 97.7 50-150

Matrix Spike Dup (1924042-MSD1)

Source: P906058-02

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Benzene	4.29	0.0250	mg/kg	5.00	ND	85.8	54.3-133	6.56	20	
Toluene	4.72	0.0250	"	5.00	ND	94.3	61.4-130	6.56	20	
Ethylbenzene	4.73	0.0250	"	5.00	ND	94.6	61.4-133	6.55	20	
p,m-Xylene	9.74	0.0500	"	10.0	ND	97.4	63.3-131	6.37	20	
o-Xylene	4.73	0.0250	"	5.00	ND	94.5	63.3-131	6.50	20	
Total Xylenes	14.5	0.0250	"	15.0	ND	96.4	63.3-131	6.41	20	

Surrogate: 4-Bromochlorobenzene-PID 7.82 " 8.00 97.8 50-150

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Brown Federal J #1
Project Number: 03143-0424
Project Manager: Steve Moskal

Reported:
06/19/19 17:27

Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1924045 - DRO Extraction EPA 3570

Blank (1924045-BLK1)

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	51.8		"	50.0		104	50-200			

LCS (1924045-BS1)

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Diesel Range Organics (C10-C28)	472	25.0	mg/kg	500		94.5	38-132			
Surrogate: n-Nonane	49.7		"	50.0		99.3	50-200			

Matrix Spike (1924045-MS1)

Source: P906030-01

Prepared: 06/13/19 1 Analyzed: 06/17/19 2

Diesel Range Organics (C10-C28)	1020	50.0	mg/kg	500	505	103	38-132			
Surrogate: n-Nonane	60.5		"	50.0		121	50-200			

Matrix Spike Dup (1924045-MSD1)

Source: P906030-01

Prepared: 06/13/19 1 Analyzed: 06/17/19 2

Diesel Range Organics (C10-C28)	1020	50.0	mg/kg	500	505	102	38-132	0.238	20	
Surrogate: n-Nonane	62.1		"	50.0		124	50-200			

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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

 Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

Nonhalogenated Organics by 8015 - GRO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1924042 - Purge and Trap EPA 5030A

Blank (1924042-BLK1)

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.25		"	8.00		103	50-150			

LCS (1924042-BS2)

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Gasoline Range Organics (C6-C10)	51.4	20.0	mg/kg	50.0		103	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.37		"	8.00		105	50-150			

Matrix Spike (1924042-MS2)

Source: P906058-02

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Gasoline Range Organics (C6-C10)	52.2	20.0	mg/kg	50.0	ND	104	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.45		"	8.00		106	50-150			

Matrix Spike Dup (1924042-MSD2)

Source: P906058-02

Prepared: 06/13/19 1 Analyzed: 06/17/19 1

Gasoline Range Organics (C6-C10)	47.9	20.0	mg/kg	50.0	ND	95.8	70-130	8.51	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.50		"	8.00		106	50-150			

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BP America Production Co.	Project Name: Brown Federal J #1	
PO Box 22024	Project Number: 03143-0424	Reported:
Tulsa OK, 74121-2024	Project Manager: Steve Moskal	06/19/19 17:27

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1925010 - Anion Extraction EPA 300.0/9056A

Blank (1925010-BLK1)

Prepared & Analyzed: 06/18/19 1

Chloride	ND	20.0	mg/kg
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LCS (1925010-BS1)

Prepared & Analyzed: 06/18/19 1

Chloride	252	20.0	mg/kg	250	101	90-110
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Matrix Spike (1925010-MS1)

Source: P906049-01

Prepared: 06/18/19 1 Analyzed: 06/18/19 2

Chloride	257	20.0	mg/kg	250	ND	103	80-120
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Matrix Spike Dup (1925010-MSD1)

Source: P906049-01

Prepared: 06/18/19 1 Analyzed: 06/18/19 2

Chloride	257	20.0	mg/kg	250	ND	103	80-120	0.0740	20
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QC Summary Report

Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

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BP America Production Co.
 PO Box 22024
 Tulsa OK, 74121-2024

Project Name: Brown Federal J #1
 Project Number: 03143-0424
 Project Manager: Steve Moskal

Reported:
 06/19/19 17:27

Notes and Definitions

Surr2 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

** Methods marked with ** are non-accredited methods.

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