2350 W Marland Blvd Hobbs, NM 88240

# Closure Report

January 23, 2020

Re: Hawk B-1 Battery
API# 30-025-35799
Case # 1RP-5252

On 10/23/2018 a release was discovered due to gasket on the water leg of the fresh water knockout failed. An initial C-141 was submitted and approved by NMOCD on 11/5/2018. The Hawk B-1 Battery (GPS Coordinates 32.49164 -103.16801) is located north of Eunice New Mexico in unit letter K section 9 township 21S range 37E. A 2000 meter radius groundwater survey was conducted utilizing the NMOSE web page and USGS web page. There are four USGS wells located in section 9 with an average depth of groundwater at 63 feet below ground surface.

The release area was excavated to a depth of 6 inches and a remediation plan was submitted to NMOCD and denied on June 20, 2019 due to composite samples 5 and 6 were not fully delineated. Apache Corporation further excavated the composite areas for samples 5 and 6 an additional foot making the total depth of the excavation 1.5 feet. On 10/21/2019 final five point bottom and wall composite samples were collected not to exceed 200 square feet and submitted to a commercial laboratory for analysis for chloride, TPH, and BTEX. Composite sample point 3 was not sampled on 10/21/2019 due to it meet table one standards on sampling date 1/29/2019. The laboratory results were below table one standards for releases were groundwater is 51-100 feet. All excavated soil was hauled to an NMOCD approved disposal facility. The deeper excavation was backfilled with clean imported caliche.

Apache Corporation has remediated the release to NMOCD closure criteria and respectfully request that event 1RP-5252 be closed

*Enclosed: C-141, Groundwater Data, Sample Map, Sample Data, Laboratory Analysis, and Photos*

*Submitted by;*

*Bruce Baker*

***Environmental Technician***
*larry.baker@apachecorp.com*
***Cell# 432-631-6982***
***Off# 575-393-7106***

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 | NOY1830928183 |
| District RP | 1RP-5252 |
| Facility ID | |
| Application ID | pOY1830928473 |

# Release Notification

## Responsible Party

| | | | |
|---|---|---|---|
| Responsible Party | Apache Corporation | OGRID | 873 |
| Contact Name | Bruce Baker | Contact Telephone | 432-631-6982 |
| Contact email | larry.baker@apachecorp.com | Incident # (assigned by OCD) | NOY1830928183 |
| Contact mailing address | 2350 W. Marland BLVD Hobbs, NM 88240 | | |

## Location of Release Source

Latitude 32.49164 Longitude -103.16801
(NAD 83 in decimal degrees to 5 decimal places)

| | | | |
|---|---|---|---|
| Site Name | Hawk B 1 Battery | Site Type | Battery |
| Date Release Discovered | 10/23/2018 | API# (if applicable) | 30-025-35799 |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| K | 9 | 21S | 37E | Lea |

Federal minerals

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☑ Private (Name: Milland Deck Estates)

## Nature and Volume of Release

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

| | | |
|---|---|---|
| ☑ Crude Oil | Volume Released (bbls) 15 barrels | Volume Recovered (bbls) 10 barrels |
| ☑ Produced Water | Volume Released (bbls) 3.8 barrels | Volume Recovered (bbls) 0 recovered |
| | Is the concentration of dissolved chloride in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☐ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release: A gasket on the water leg of the FWKO failed resulting in loss of fluid.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | |
| Facility ID | |
| Application ID | |

| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br>☐ Yes ☑ 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*

- ☑ The source of the release has been stopped.
- ☑ The impacted area has been secured to protect human health and the environment.
- ☑ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☑ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not 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: Bruce Baker  Title: Environmental Tech SR.

Signature: Bruce Baker  Date: 11/1/2018

email: larry.baker@apachecorp.com  Telephone: 432-631-6982

**OCD Only**

Received by: RECEIVED By Olivia Yu at 7:43 am, Nov 05, 2018  Date:

## Volume Calculation

50X15X.2=150 cubic feet X 7.48 gallon per cubic foot= 1,122 gallons/42 gallons to barrel=26 barrels X .33 soil porosity= 8.8 barrels + 10 barrels recovered = 18.8 barrels lost.

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | |
| Facility ID | |
| Application ID | |

# 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? | _____ (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☑ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☑ 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)? | ☐ Yes ☑ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☑ 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? | ☐ Yes ☑ No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☑ No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | ☐ Yes ☑ No |
| Are the lateral extents of the release within 300 feet of a wetland? | ☐ Yes ☑ No |
| Are the lateral extents of the release overlying a subsurface mine? | ☐ Yes ☑ No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | ☐ Yes ☑ No |
| Are the lateral extents of the release within a 100-year floodplain? | ☐ Yes ☑ No |
| Did the release impact areas **not** on an exploration, development, production, or storage site? | ☐ Yes ☑ 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.

**Characterization Report Checklist:** ***Each of the following items must be included in the report.***

- ☑ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☑ Field data
- ☑ Data table of soil contaminant concentration data
- ☑ Depth to water determination
- ☑ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☑ Boring or excavation logs
- ☑ Photographs including date and GIS information
- ☑ Topographic/Aerial maps
- ☑ Laboratory data including chain of custody

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 I of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 5

State of New Mexico
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| | |
|---|---|
| Incident ID | |
| District RP | |
| Facility ID | |
| Application ID | |

# Remediation Plan

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

- [x] Detailed description of proposed remediation technique
- [x] Scaled sitemap with GPS coordinates showing delineation points
- [x] Estimated volume of material to be remediated
- [x] Closure criteria is to Table I specifications subject to 19.15.29.12(C)(4) NMAC
- [x] 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.

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: Bruce Baker  Title: Environmental Tech. SR

Signature: Bruce Baker  Date: 1-24-19

email: larry.baker@apachecorp.com  Telephone: 432-631-6982

**OCD Only**

Received by:  Date:

- [ ] Approved
- [ ] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

Signature:  Date:

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | |
| Facility ID | |
| Application ID | |

# 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: Bruce Baker Title: Environmental Tech. SR.

Signature: Bruce Baker Date: 1-23-20

email: larry.baker@apachecorp.com Telephone: 432-631-6982

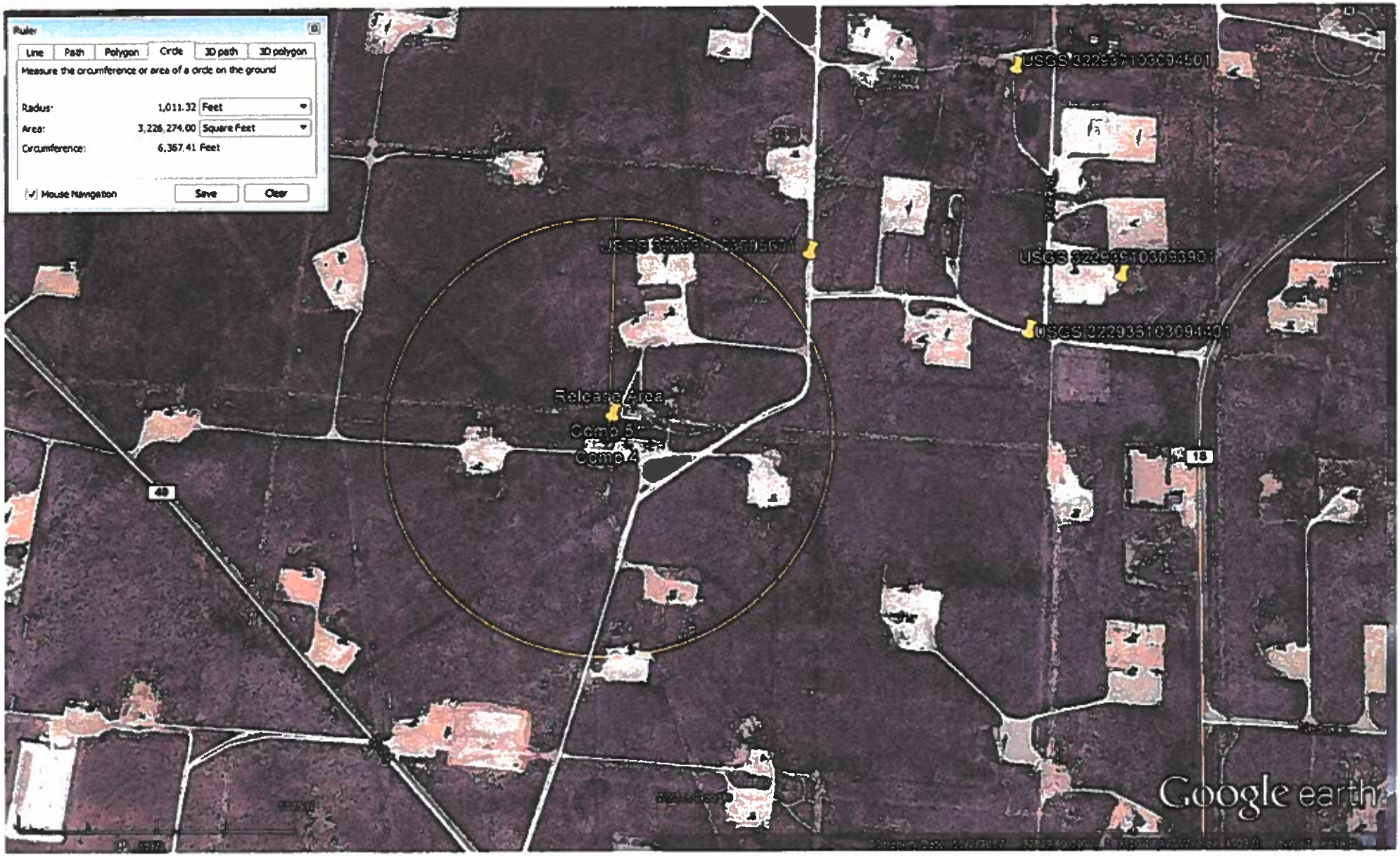
**OCD Only**

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: _____


Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the circumference or area of a circle on the ground
Radius: 1,011.32 Feet
Area: 3,226,274.00 Square Feet
Circumference: 6,357.41 Feet
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Clear
Release Area
Comp 5
Comp 4
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**Agency code** = usgs
**site_no list** =
- 322939103095601

**Minimum number of levels** = 1
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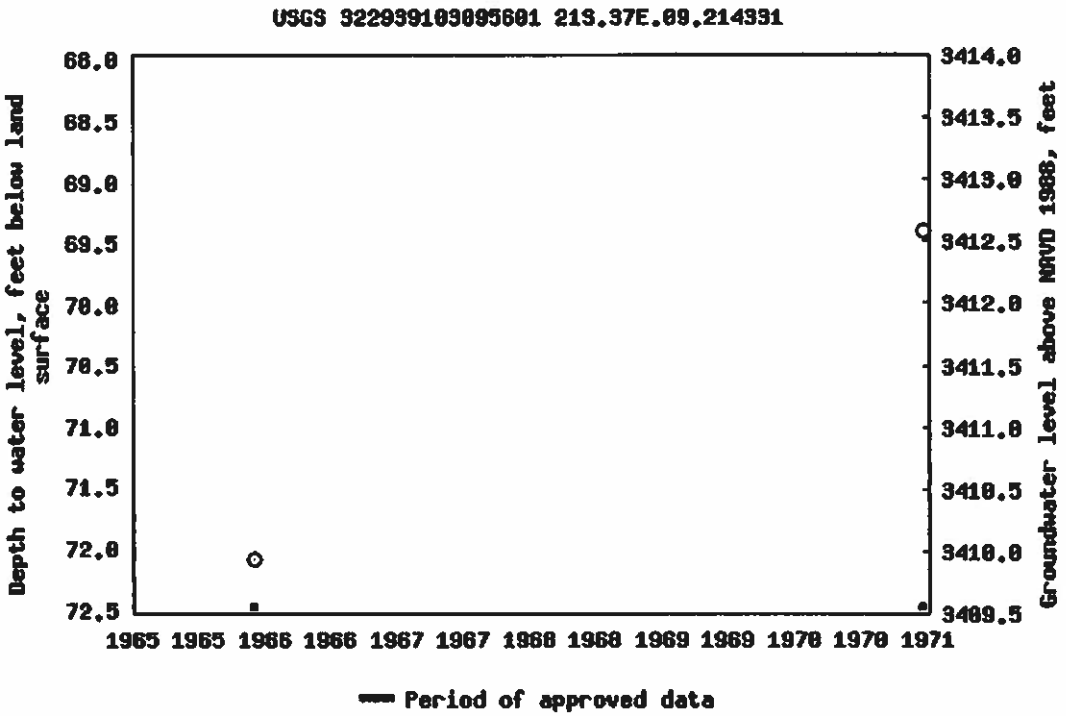
## USGS 322939103095601 21S.37E.09.214331

Available data for this site: Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°29'39", Longitude 103°09'56" NAD27
Land-surface elevation 3,482 feet above NAVD88
The depth of the well is 400 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

## Output formats

| |
|---|
| Table of data |
| Tab-separated data |
| Graph of data |
| Reselect period |




Breaks in the plot represent a gap of at least one year between field measurements.
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**URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?**

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1.4 1.1 nadww01

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**site_no list** =
- 322936103094401

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## USGS 322936103094401 21S.37E.09.241213

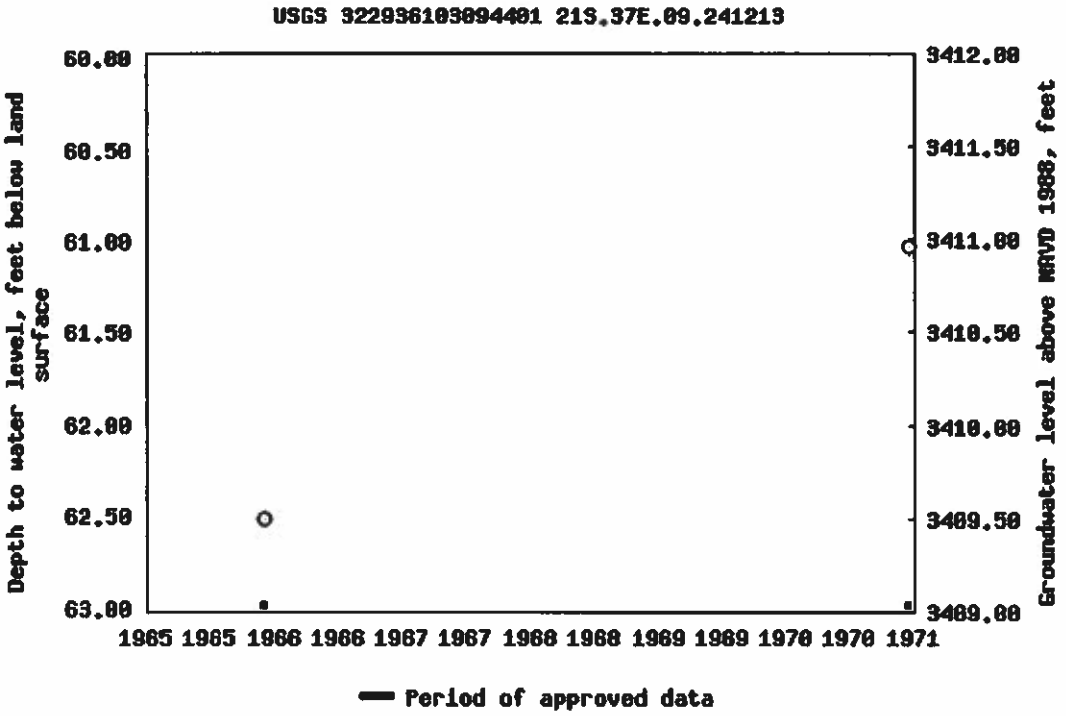
Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°29'36", Longitude 103°09'44" NAD27
Land-surface elevation 3,472 feet above NAVD88
The depth of the well is 90 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

**Output formats**

| |
|---|
| Table of data |
| Tab-separated data |
| Graph of data |
| Reselect period |

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- 322939103093901

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## USGS 322939103093901 21S.37E.09.22430

Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°29'39", Longitude 103°09'39" NAD27
Land-surface elevation 3,468 feet above NAVD88
The depth of the well is 90 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

**Output formats**

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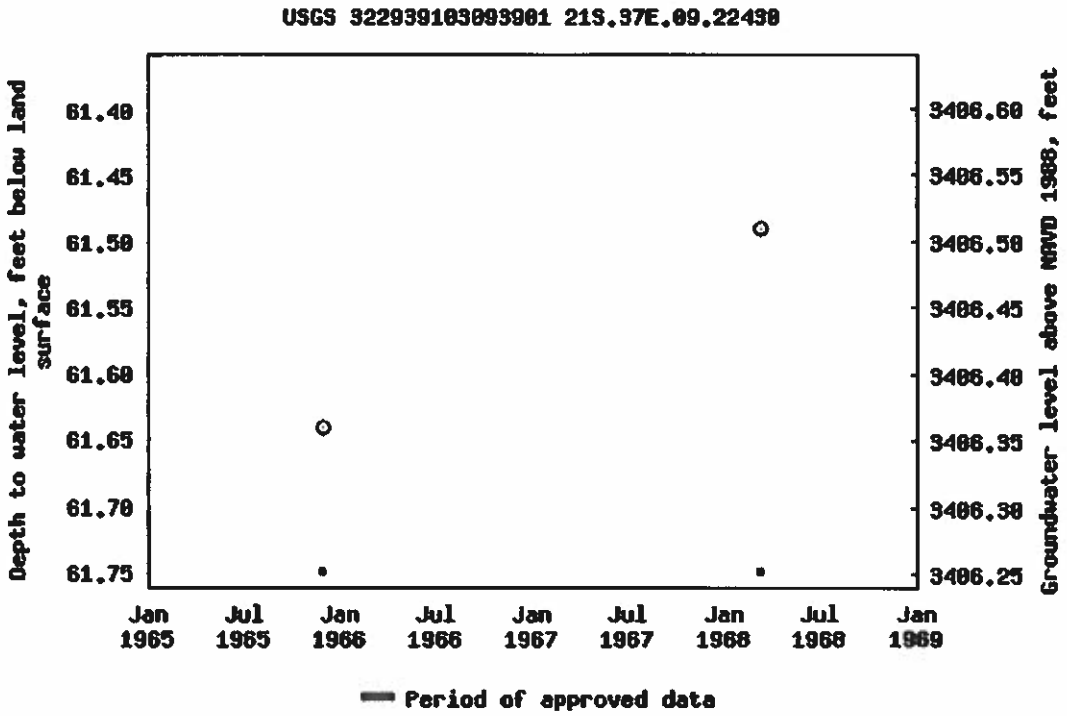
| Table of data |
| Tab-separated data |
| Graph of data |
| Reselect period |

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## USGS 322937103094501 21S.37E.09.241211

Available data for this site: Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°29'49", Longitude 103°09'45" NAD27
Land-surface elevation 3,466.60 feet above NGVD29
The depth of the well is 90 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

**Output formats**

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| Table of data |
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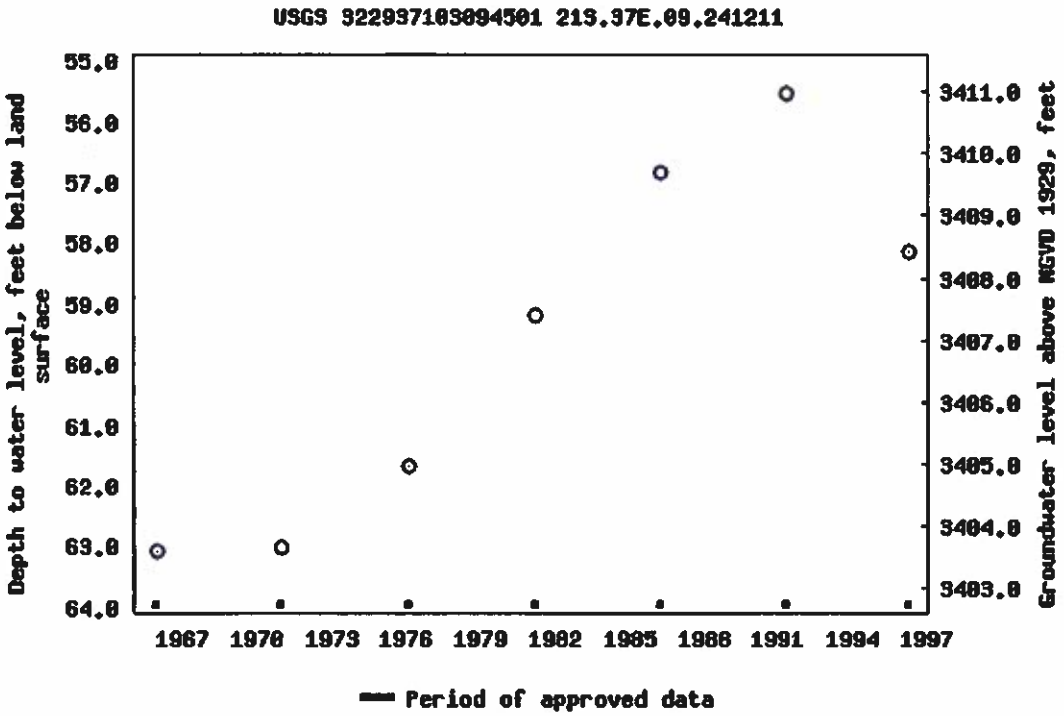


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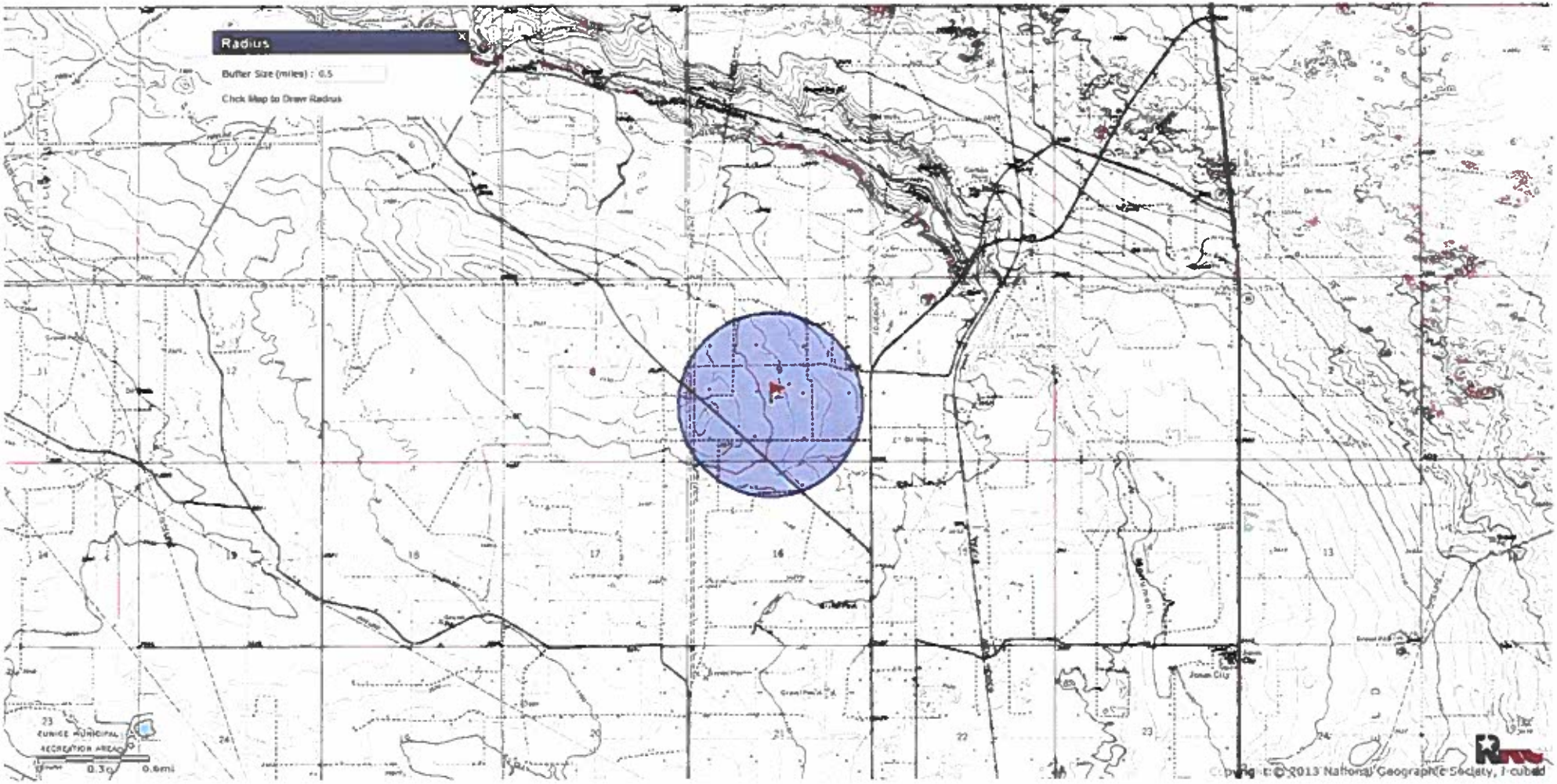
Radius
Buffer Size (miles) : 0.5
Click Map to Draw Radius
Eunice Municipal Recreation Area
0.3mi
0.6mi
Jones City
Image © 2013 National Geographic Society, i-cubed

Comp 1
Comp 2
Comp 3
Comp 4
Comp 5
Comp 6
Google Earth

Hawk B-1 Battery

| Sample Pt. | GPS | Depth | Lab CL | Benzene | Toluene | Ethylbenzene | Total Xylenes | Total BTEX | GRO | DRO | EXT DRO | Sample Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Comp 1 | 32.4918205 - 103.1682405 | 6" | 48 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | <10.0 | 291 | 112 | 10/21/2019 |
| Comp 2 | 32.4918250 - 103.1682750 | 6" | 32 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | <10.0 | 983 | 377 | 10/21/2019 |
| Comp 3 | 32.4918329 - 103.1683219 | 6" | 64 | <0.050 | <0.050 | 0.133 | 0.477 | 0.61 | <50 | 112 | 56.9 | 1/29/2019 |
| Comp 4 | 32.4917520 - 103.1681798 | 6" | 64 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | <10.0 | 41 | 18.5 | 10/21/2019 |
| Comp 5 | 32.4917605 - 103.1682723 | 6" | 80 | <0.100 | 0.439 | 3.07 | 10 | 13.5 | 364 | 5270 | 859 | 1/29/2019 |
| Comp 5 | | 1.5 | 16 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | <10.0 | 600 | 215 | 10/21/2019 |
| SP 1 | 32.4917820 - 103.1683394 | 1' | | <0.100 | 3.27 | 12.4 | 31.3 | 47 | 1060 | 16400 | 3430 | 1/29/2019 |
| Comp 6 | | 1.5 | <16 | <0.050 | <0.050 | <0.050 | <0.150 | <0.300 | <10.0 | 374 | 229 | 10/21/2019 |

Note: The laboratory report for 10/21/2019 shows depth to be 1' but the sampler didn't take into account that the area had previously been excavated to 6 inches.

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

January 22, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: HAWK

Enclosed are the results of analyses for samples received by the laboratory on 01/21/19 16:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

| | |
|---|---|
| Method EPA 552.2 | Haloacetic Acids (HAA-5) |
| Method EPA 524.2 | Total Trihalomethanes (TTHM) |
| Method EPA 524.4 | Regulated VOCs (V1, V2, V3) |

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 01/21/2019 | Sampling Date: | 01/21/2019 |
| Reported: | 01/22/2019 | Sampling Type: | Soil |
| Project Name: | HAWK | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | NOT GIVEN | | |

### Sample ID: COMPOSITE POINT 3 (H900204-01)

**BTEX 8021B** mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.050 | 0.050 | 01/22/2019 | ND | 1.75 | 87.5 | 2.00 | 0.474 | |
| Toluene* | <0.050 | 0.050 | 01/22/2019 | ND | 1.80 | 89.9 | 2.00 | 0.0420 | |
| **Ethylbenzene*** | **0.133** | 0.050 | 01/22/2019 | ND | 1.78 | 88.8 | 2.00 | 3.20 | |
| **Total Xylenes*** | **0.477** | 0.150 | 01/22/2019 | ND | 5.25 | 87.4 | 6.00 | 1.31 | |
| **Total BTEX** | **0.610** | 0.300 | 01/22/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* 109 % 73.3-129

**Chloride, SM4500Cl-B** mg/kg Analyzed By: AC

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **64.0** | 16.0 | 01/22/2019 | ND | 432 | 108 | 400 | 0.00 | |

**TPH 8015M** mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| GRO C6-C10* | <50.0 | 50.0 | 01/22/2019 | ND | 212 | 106 | 200 | 0.401 | |
| **DRO >C10-C28*** | **112** | 50.0 | 01/22/2019 | ND | 218 | 109 | 200 | 6.50 | |
| **EXT DRO >C28-C36** | **56.9** | 50.0 | 01/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* 91.1 % 41-142

*Surrogate: 1-Chlorooctadecane* 97.1 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 01/21/2019 | Sampling Date: | 01/21/2019 |
| Reported: | 01/22/2019 | Sampling Type: | Soil |
| Project Name: | HAWK | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | NOT GIVEN | | |

### Sample ID: COMPOSITE POINT 5 (H900204-02)

**BTEX 8021B** mg/kg Analyzed By: MS S-04

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.100 | 0.100 | 01/22/2019 | ND | 1.75 | 87.5 | 2.00 | 0.474 | |
| **Toluene*** | **0.439** | 0.100 | 01/22/2019 | ND | 1.80 | 89.9 | 2.00 | 0.0420 | |
| **Ethylbenzene*** | **3.07** | 0.100 | 01/22/2019 | ND | 1.78 | 88.8 | 2.00 | 3.20 | |
| **Total Xylenes*** | **10.0** | 0.300 | 01/22/2019 | ND | 5.25 | 87.4 | 6.00 | 1.31 | |
| **Total BTEX** | **13.5** | 0.600 | 01/22/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* *167 %* *73.3-129*

**Chloride, SM4500Cl-B** mg/kg Analyzed By: AC

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **80.0** | 16.0 | 01/22/2019 | ND | 432 | 108 | 400 | 0.00 | |

**TPH 8015M** mg/kg Analyzed By: MS S-06

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| **GRO C6-C10*** | **364** | 50.0 | 01/22/2019 | ND | 212 | 106 | 200 | 0.401 | |
| **DRO >C10-C28*** | **5270** | 50.0 | 01/22/2019 | ND | 218 | 109 | 200 | 6.50 | |
| **EXT DRO >C28-C36** | **859** | 50.0 | 01/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *119 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *209 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## *Analytical Results For:*

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 01/21/2019 | Sampling Date: | 01/21/2019 |
| Reported: | 01/22/2019 | Sampling Type: | Soil |
| Project Name: | HAWK | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | NOT GIVEN | | |

**Sample ID: SAMPLE POINT 1 @ 1' (H900204-03)**

**BTEX 8021B** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.100 | 0.100 | 01/22/2019 | ND | 1.75 | 87.5 | 2.00 | 0.474 | |
| **Toluene*** | **3.27** | 0.100 | 01/22/2019 | ND | 1.80 | 89.9 | 2.00 | 0.0420 | |
| **Ethylbenzene*** | **12.4** | 0.100 | 01/22/2019 | ND | 1.78 | 88.8 | 2.00 | 3.20 | |
| **Total Xylenes*** | **31.3** | 0.300 | 01/22/2019 | ND | 5.25 | 87.4 | 6.00 | 1.31 | |
| **Total BTEX** | **47.0** | 0.600 | 01/22/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* *97.0 %* *73.3-129*

**TPH 8015M** mg/kg **Analyzed By: MS** **S-06**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| **GRO C6-C10*** | **1060** | 100 | 01/22/2019 | ND | 212 | 106 | 200 | 0.401 | |
| **DRO >C10-C28*** | **16400** | 100 | 01/22/2019 | ND | 218 | 109 | 200 | 6.50 | |
| **EXT DRO >C28-C36** | **3430** | 100 | 01/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *163 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *467 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Notes and Definitions

| | |
|---|---|
| S-06 | The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's. |
| S-04 | The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect. |
| QR-03 | The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values. |
| QM-07 | The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery. |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| RPD | Relative Percent Difference |
| ** | Samples not received at proper temperature of 6°C or below. |
| *** | Insufficient time to reach temperature. |
| - | Chloride by SM4500CI-B does not require samples be received at or below 6°C |
| | Samples reported on an as received basis (wet) unless otherwise noted on report |

Cardinal Laboratories

*=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

| | | | |
|---|---|---|---|
| Company Name: Apache | | **BILL TO** | |
| Project Manager: Bruce Baker | | P.O. #: | |
| Address: | | Company: | |
| City: Hobbs | State: NM Zip: 88240 | Attn: | |
| Phone #: | Fax #: | Address: | |
| Project #: | Project Owner: | City: | |
| Project Name: | | State: Zip: | |
| Project Location: Maralo | | Phone #: | |
| Sampler Name: | | Fax #: | |

| FOR LAB USE ONLY Lab I.D. | Sample I.D. | (G)RAB OR (C)OMP. | # CONTAINERS | MATRIX: GROUNDWATER | WASTEWATER | SOIL | OIL | SLUDGE | OTHER | PRESERV.: ACID/BASE: | ICE/ COOL | OTHER | SAMPLING: DATE | TIME | ANALYSIS REQUEST: Cl | TPH 8015M | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H900204 | | | | | | | | | | | | | | | | | |
| 1 | Composite Point 3 | C | | | | X | | | | | X | | 1-21 | 11:05AM | X | X | X |
| 2 | Composite Point 5 | C | | | | X | | | | | X | | 1-21 | 11:18AM | X | X | X |
| 3 | Sample Point 1@1' | G | | | | X | | | | | X | | 1-21 | 11:15AM | | X | X |

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

| | | | |
|---|---|---|---|
| Relinquished By: | Date: 1-21-19 | Received By: | Phone Result: ☐ Yes ☐ No Add'l Phone #: |
| | Time: 16:10 | | Fax Result: ☐ Yes ☐ No Add'l Fax #: |
| Relinquished By: | Date: | Received By: | REMARKS: Email Results Rush |
| | Time: | | |

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 3.2° C #97

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) TC

Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

October 24, 2019

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: HAWK B BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 10/21/19 16:24.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

| | |
|---|---|
| Method EPA 552.2 | Haloacetic Acids (HAA-5) |
| Method EPA 524.2 | Total Trihalomethanes (TTHM) |
| Method EPA 524.4 | Regulated VOCs (V1, V2, V3) |

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

APACHE CORP - HOBBS
JEFFREY BROOM
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 10/21/2019 | Sampling Date: | 10/21/2019 |
| Reported: | 10/24/2019 | Sampling Type: | Soil |
| Project Name: | HAWK B BATTERY | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | EUNICE, NM | | |

**Sample ID: COMPOSITE 1 @ .6 32.4918205 - 103.1682405 (H903593-**

**BTEX 8021B** mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.050 | 0.050 | 10/22/2019 | ND | 1.67 | 83.5 | 2.00 | 3.70 | |
| Toluene* | <0.050 | 0.050 | 10/22/2019 | ND | 1.79 | 89.3 | 2.00 | 2.62 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/22/2019 | ND | 1.72 | 86.2 | 2.00 | 1.77 | |
| Total Xylenes* | <0.150 | 0.150 | 10/22/2019 | ND | 5.36 | 89.4 | 6.00 | 1.58 | |
| Total BTEX | <0.300 | 0.300 | 10/22/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PIL* *108 %* *73.3-129*

**Chloride, SM4500Cl-B** mg/kg Analyzed By: AC

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **48.0** | 16.0 | 10/23/2019 | ND | 448 | 112 | 400 | 0.00 | |

**TPH 8015M** mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| GRO C6-C10* | <10.0 | 10.0 | 10/22/2019 | ND | 209 | 104 | 200 | 2.83 | |
| **DRO >C10-C28*** | **291** | 10.0 | 10/22/2019 | ND | 207 | 103 | 200 | 2.45 | |
| **EXT DRO >C28-C36** | **112** | 10.0 | 10/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *104 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *128 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

APACHE CORP - HOBBS
JEFFREY BROOM
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 10/21/2019 | Sampling Date: | 10/21/2019 |
| Reported: | 10/24/2019 | Sampling Type: | Soil |
| Project Name: | HAWK B BATTERY | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | EUNICE, NM | | |

**Sample ID: COMPOSITE 2 @ .6 32.4918250 - 103.1682705 (H903593-**

**BTEX 8021B** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.050 | 0.050 | 10/22/2019 | ND | 1.67 | 83.5 | 2.00 | 3.70 | |
| Toluene* | <0.050 | 0.050 | 10/22/2019 | ND | 1.79 | 89.3 | 2.00 | 2.62 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/22/2019 | ND | 1.72 | 86.2 | 2.00 | 1.77 | |
| Total Xylenes* | <0.150 | 0.150 | 10/22/2019 | ND | 5.36 | 89.4 | 6.00 | 1.58 | |
| Total BTEX | <0.300 | 0.300 | 10/22/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* *109 %* *73.3-129*

**Chloride, SM4500Cl-B** mg/kg **Analyzed By: AC**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **32.0** | 16.0 | 10/23/2019 | ND | 448 | 112 | 400 | 0.00 | |

**TPH 8015M** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| GRO C6-C10* | <10.0 | 10.0 | 10/22/2019 | ND | 209 | 104 | 200 | 2.83 | |
| **DRO >C10-C28*** | **983** | 10.0 | 10/22/2019 | ND | 207 | 103 | 200 | 2.45 | |
| **EXT DRO >C28-C36** | **377** | 10.0 | 10/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *109 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *138 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

APACHE CORP - HOBBS
JEFFREY BROOM
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 10/21/2019 | Sampling Date: | 10/21/2019 |
| Reported: | 10/24/2019 | Sampling Type: | Soil |
| Project Name: | HAWK B BATTERY | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | EUNICE, NM | | |

**Sample ID: COMPOSITE 4 @ .6 32.4917520 - 103.1681798 (H903593-I**

**BTEX 8021B** mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.93 | 96.5 | 2.00 | 1.01 | |
| Toluene* | <0.050 | 0.050 | 10/23/2019 | ND | 2.01 | 101 | 2.00 | 1.54 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.99 | 99.6 | 2.00 | 0.131 | |
| Total Xylenes* | <0.150 | 0.150 | 10/23/2019 | ND | 6.02 | 100 | 6.00 | 0.587 | |
| Total BTEX | <0.300 | 0.300 | 10/23/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* *106 %* *73.3-129*

**Chloride, SM4500Cl-B** mg/kg Analyzed By: AC

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **64.0** | 16.0 | 10/23/2019 | ND | 448 | 112 | 400 | 0.00 | |

**TPH 8015M** mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| GRO C6-C10* | <10.0 | 10.0 | 10/22/2019 | ND | 168 | 83.9 | 200 | 5.17 | |
| **DRO >C10-C28*** | **41.0** | 10.0 | 10/22/2019 | ND | 161 | 80.7 | 200 | 5.35 | |
| **EXT DRO >C28-C36** | **18.5** | 10.0 | 10/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *92.4 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *110 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

APACHE CORP - HOBBS
JEFFREY BROOM
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 10/21/2019 | Sampling Date: | 10/21/2019 |
| Reported: | 10/24/2019 | Sampling Type: | Soil |
| Project Name: | HAWK B BATTERY | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | EUNICE, NM | | |

**Sample ID: COMPOSITE 5 @ 1" 32.4917605 - 103.1682723 (H903593-**

**BTEX 8021B** mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.93 | 96.5 | 2.00 | 1.01 | |
| Toluene* | <0.050 | 0.050 | 10/23/2019 | ND | 2.01 | 101 | 2.00 | 1.54 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.99 | 99.6 | 2.00 | 0.131 | |
| Total Xylenes* | <0.150 | 0.150 | 10/23/2019 | ND | 6.02 | 100 | 6.00 | 0.587 | |
| Total BTEX | <0.300 | 0.300 | 10/23/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* *109 %* *73.3-129*

**Chloride, SM4500Cl-B** mg/kg Analyzed By: AC

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **16.0** | 16.0 | 10/23/2019 | ND | 448 | 112 | 400 | 0.00 | |

**TPH 8015M** mg/kg Analyzed By: MS

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| GRO C6-C10* | <10.0 | 10.0 | 10/22/2019 | ND | 168 | 83.9 | 200 | 5.17 | |
| **DRO >C10-C28*** | **600** | 10.0 | 10/22/2019 | ND | 161 | 80.7 | 200 | 5.35 | |
| **EXT DRO >C28-C36** | **215** | 10.0 | 10/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *92.5 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *129 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

APACHE CORP - HOBBS
JEFFREY BROOM
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 10/21/2019 | Sampling Date: | 10/21/2019 |
| Reported: | 10/24/2019 | Sampling Type: | Soil |
| Project Name: | HAWK B BATTERY | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | EUNICE, NM | | |

**Sample ID: COMPOSITE 6 @ 1" 32.4917820 - 103.1683394 (H903593-**

**BTEX 8021B** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.93 | 96.5 | 2.00 | 1.01 | |
| Toluene* | <0.050 | 0.050 | 10/23/2019 | ND | 2.01 | 101 | 2.00 | 1.54 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.99 | 99.6 | 2.00 | 0.131 | |
| Total Xylenes* | <0.150 | 0.150 | 10/23/2019 | ND | 6.02 | 100 | 6.00 | 0.587 | |
| Total BTEX | <0.300 | 0.300 | 10/23/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* *108 %* *73.3-129*

**Chloride, SM4500Cl-B** mg/kg **Analyzed By: AC**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <16.0 | 16.0 | 10/23/2019 | ND | 448 | 112 | 400 | 0.00 | |

**TPH 8015M** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| GRO C6-C10* | <10.0 | 10.0 | 10/22/2019 | ND | 168 | 83.9 | 200 | 5.17 | |
| **DRO >C10-C28*** | **374** | 10.0 | 10/22/2019 | ND | 161 | 80.7 | 200 | 5.35 | |
| **EXT DRO >C28-C36** | **229** | 10.0 | 10/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *96.2 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *122 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## *Analytical Results For:*

APACHE CORP - HOBBS
JEFFREY BROOM
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 10/21/2019 | Sampling Date: | 10/18/2019 |
| Reported: | 10/24/2019 | Sampling Type: | Soil |
| Project Name: | HAWK B BATTERY | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | EUNICE, NM | | |

**Sample ID: W -1 32.491750 - 103.168362 (H903593-06)**

**BTEX 8021B** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.93 | 96.5 | 2.00 | 1.01 | |
| Toluene* | <0.050 | 0.050 | 10/23/2019 | ND | 2.01 | 101 | 2.00 | 1.54 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.99 | 99.6 | 2.00 | 0.131 | |
| Total Xylenes* | <0.150 | 0.150 | 10/23/2019 | ND | 6.02 | 100 | 6.00 | 0.587 | |
| Total BTEX | <0.300 | 0.300 | 10/23/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* *108 %* *73.3-129*

**Chloride, SM4500Cl-B** mg/kg **Analyzed By: AC**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <16.0 | 16.0 | 10/23/2019 | ND | 448 | 112 | 400 | 0.00 | |

**TPH 8015M** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| GRO C6-C10* | <10.0 | 10.0 | 10/22/2019 | ND | 168 | 83.9 | 200 | 5.17 | |
| **DRO >C10-C28*** | **130** | 10.0 | 10/22/2019 | ND | 161 | 80.7 | 200 | 5.35 | |
| **EXT DRO >C28-C36** | **103** | 10.0 | 10/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *94.9 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *118 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

APACHE CORP - HOBBS
JEFFREY BROOM
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

| | | | |
|---|---|---|---|
| Received: | 10/21/2019 | Sampling Date: | 10/18/2019 |
| Reported: | 10/24/2019 | Sampling Type: | Soil |
| Project Name: | HAWK B BATTERY | Sampling Condition: | Cool & Intact |
| Project Number: | NONE GIVEN | Sample Received By: | Tamara Oldaker |
| Project Location: | EUNICE, NM | | |

**Sample ID: W -2 32.491746 - 103.168368 (H903593-07)**

**BTEX 8021B** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Benzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.93 | 96.5 | 2.00 | 1.01 | |
| Toluene* | <0.050 | 0.050 | 10/23/2019 | ND | 2.01 | 101 | 2.00 | 1.54 | |
| Ethylbenzene* | <0.050 | 0.050 | 10/23/2019 | ND | 1.99 | 99.6 | 2.00 | 0.131 | |
| Total Xylenes* | <0.150 | 0.150 | 10/23/2019 | ND | 6.02 | 100 | 6.00 | 0.587 | |
| Total BTEX | <0.300 | 0.300 | 10/23/2019 | ND | | | | | |

*Surrogate: 4-Bromofluorobenzene (PID* *109 %* *73.3-129*

**Chloride, SM4500Cl-B** mg/kg **Analyzed By: AC**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <16.0 | 16.0 | 10/23/2019 | ND | 448 | 112 | 400 | 0.00 | |

**TPH 8015M** mg/kg **Analyzed By: MS**

| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
|---|---|---|---|---|---|---|---|---|---|
| GRO C6-C10* | <10.0 | 10.0 | 10/22/2019 | ND | 168 | 83.9 | 200 | 5.17 | |
| **DRO >C10-C28*** | **90.3** | 10.0 | 10/22/2019 | ND | 161 | 80.7 | 200 | 5.35 | |
| **EXT DRO >C28-C36** | **27.1** | 10.0 | 10/22/2019 | ND | | | | | |

*Surrogate: 1-Chlorooctane* *92.6 %* *41-142*

*Surrogate: 1-Chlorooctadecane* *110 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte



Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Notes and Definitions

| | |
|---|---|
| ND | Analyte NOT DETECTED at or above the reporting limit |
| RPD | Relative Percent Difference |
| ** | Samples not received at proper temperature of 6°C or below. |
| *** | Insufficient time to reach temperature. |
| - | Chloride by SM4500Cl-B does not require samples be received at or below 6°C |
| | Samples reported on an as received basis (wet) unless otherwise noted on report |





Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

| | | | |
|---|---|---|---|
| Company Name: Apache corporation | **BILL TO** | P.O. #: | |
| Project Manager: Jeff Bacon | | Company: | |
| Address: | | Attn: | |
| City: State: Zip: | | Address: | |
| Phone #: Fax #: | | City: | |
| Project #: Project Owner: | | State: Zip: | |
| Project Name: Hawk B Battery | | Phone #: | |
| Project Location: Eunice, NM | | Fax #: | |
| Sampler Name: Daniel Rasler | | | |

| FOR LAB USE ONLY | | | | MATRIX | | | | | | PRESERV. | | | SAMPLING | | ANALYSIS REQUEST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab I.D. | Sample I.D. | (G)RAB OR (C)OMP. | # CONTAINERS | GROUNDWATER | WASTEWATER | SOIL | OIL | SLUDGE | OTHER: | ACID/BASE: | ICE / COOL | OTHER: | DATE | TIME | CL | EXT. TPH | BTEX |
| H903593 | | | | | | | | | | | | | | | | | |
| 1 | Composite 1 @ .5 32.4918205 | | | | | | | | | | | | 10/21/19 | | ✓ | ✓ | ✓ |
| | -103.1682405 | | | | | | | | | | | | | | | | |
| 2 | Composite 2 @ .5 32.4918250 | | | | | | | | | | | | 10/21/19 | | ✓ | ✓ | ✓ |
| | -103.1682705 | | | | | | | | | | | | | | | | |
| 3 | Composite 4 @ .5 32.4917520 | | | | | | | | | | | | 10/21/19 | | ✓ | ✓ | ✓ |
| | 103.16 81798 | | | | | | | | | | | | | | | | |
| 4 | Composite 5 @ 1" 32.4917605 | | | | | | | | | | | | 10/ /19 | | ✓ | ✓ | ✓ |
| | -103.1682723 | | | | | | | | | | | | | | | | |
| 5 | Composite 6 @ 1" 32.4917920 | | | | | | | | | | | | 10/ /19 | | ✓ | ✓ | ✓ |
| | -103.1683394 | | | | | | | | | | | | | | | | |



| | | | |
|---|---|---|---|
| Relinquished By: Daniel Rasler | Date: 10/21/19 Time: 4:24 PM | Received By: Brandi Oldaker | Phone Result: ☐ Yes ☐ No Add'l Phone #: |
| Relinquished By: | Date: Time: | Received By: | Fax Result: ☐ Yes ☐ No Add'l Fax #: |
| | | | REMARKS: Email to Ben@TrinityOilfieldServices.com |
| Delivered By: (Circle One) Sampler - UPS - Bus - Other 2.5°c 2.9°correct | Sample Condition Cool: Yes / No Intact: Yes / No | CHECKED BY: (Initials) BWF 97 | |

# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

| | |
|---|---|
| Company Name: Apache Corporation | **BILL TO** P.O. #: |
| Project Manager: Jeff Broom | Company: |
| Address: | Attn: |
| City: State: Zip: | Address: |
| Phone #: Fax #: | City: |
| Project #: Project Owner: | State: Zip: |
| Project Name: Hawk B Battery | Phone #: |
| Project Location: | Fax #: |
| Sampler Name: Daniel Rasler | |

| FOR LAB USE ONLY Lab I.D. | Sample I.D. | (G)RAB OR (C)OMP. | # CONTAINERS | MATRIX: GROUNDWATER | WASTEWATER | SOIL | OIL | SLUDGE | OTHER : | PRESERV.: ACID/BASE: | ICE / COOL | OTHER : | SAMPLING: DATE | TIME | ANALYSIS REQUEST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H903593 | | | | | | | | | | | | | | | |
| 6 | W-132.49750 -103.168362 | | | | | | | | | | | | 10/18/19 | | ✓ ✓ ✓ |
| 7 | W-2 32.491746 -103.168368 | | | | | | | | | | | | 10/18/19 | | ✓ ✓ ✓ |

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| | | | |
|---|---|---|---|
| Relinquished By: | Date: 10/21/19 | Received By: Brandi Oldaker | Phone Result: ☐ Yes ☐ No Add'l Phone #: |
| Relinquished By: | Time: 4:24pm | Received By: | Fax Result: ☐ Yes ☐ No Add'l Fax #: |
| | Date: | | REMARKS: Email to Ben@Trinityoilfield services.com |
| | Time: | | |

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 2.5°c 2.9°correct

| Sample Condition | | CHECKED BY: (Initials) |
|---|---|---|
| Cool: ☐ Yes ☐ No | Intact: ☐ Yes ☐ No | BAO #97 |