

**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION**

**APPLICATION OF WHIPTAIL MIDSTREAM  
LLC FOR HEARING ON REMEDIATION AND  
CLOSURE PLAN, RIO ARRIBA COUNTY, NEW  
MEXICO**

**Case No. 22782**

**MOTION FOR SUMMARY JUDGMENT AND CLOSURE**

Whiptail Midstream LLC, (“Whiptail”), through its undersigned attorneys, moves the New Mexico Oil Conservation Division (“Division” or “OCD”) to issue an order in the above-referenced case that provides Whiptail final closure in Incident ID No. nAPP2125652492/Action ID No. 61609 as a matter of law under NMAC Title 19, Chapter 15, Part 29 (“Motion for Summary Judgment” or “Motion”). Whiptail respectfully submits that its actions and efforts in addressing the specific facts and circumstances of this case satisfy the Division’s rules justifying the issue of a final order closing the incident and returning the status of the Whiptail’s facility to full compliance. In support of its Motion, Whiptail provides the following:

**I. Factual and Procedural Background:**

1. Whiptail discovered a release of produced water on Friday, September 10, 2021, at the MC COM #160, a midstream transfer site located in Section 35, Township 24 North, Range 7 West, Rio Arriba County, New Mexico. The release consisted of a volume of approximately 210 bbls of produced water released into the lined containment area, classifying it as a major release.
2. On the same day as its discovery, Whiptail reported the release to the Division by phone call to Cory Smith, OCD Environmental Specialist Supervisor, and filed Form C-141, executed and dated September 10, 2021, which was received by the OCD on Monday, September

13, 2021. *See* Exhibit 1, Form C-141, pp. 1-3, attached hereto. Application ID Nos. 48186-87 were initially assigned to the incident. *See* Exhibit 2, attached hereto.

3. Whiptail promptly removed all standing liquids, consisting of approximately 210 bbls, via vac truck and pulled back the liner to examine certain places of the liner believed to be compromised. WSP USA Inc. (“WSP”) was hired to conduct clean-up and remediation of the release. The spill was contained within areas reasonably needed for production operations and did not extend beyond areas reasonably necessary for operating the midstream transfer site. *See* Exhibit 1, aerial photo of spill area, p. 10, attached hereto.

4. Upon completion of remediation, including sampling and testing of designated compounds, which measured below, thus satisfying, the threshold concentration levels in Table I of NMAC 19.15.29.12, Whiptail timely executed and submitted to the Division, on or about November 12, 2021, the follow-up sections to Form C-141, which included the Site Assessment/Characterization and Closure section, and which detailed the remediation report, showing requirements were met and requesting closure, as is standard practice among operators in New Mexico seeking closure. *See* Exhibit 1, Form C-141, pp. 4-6, attached hereto.

5. Whiptail’s Form C-141 and its request for closure appeared to have been reviewed and approved under Application ID Nos. 48186-87. *See* Exhibit 2, attached hereto, showing approval; *see also* Exhibit 3, attached hereto, re: email correspondence with the OCD.

6. Based on this approval, Whiptail assumed the matter had been fully addressed, its obligations satisfied, and the incident closed. Approximately 5 ½ months later, Whiptail received an email from the OCD dated February 26, 2022, stating that approval for the C-141 previously submitted has been rejected and returned to “Under OCD Review” status for “re-evaluation.” *See* Exhibit 3, attached hereto.

7. Sometime on or between February 24, 2022, and March 23, 2022, approval of Whiptail's remediation and closure request in Application ID Nos. 48186-87 had been rescinded and the new Application ID No. 61609 had been assigned to the matter. *See* Incident Events listed in Exhibit 4, attached hereto. *See also* Exhibit 3, email correspondence with the OCD.

8. On March 23, 2022, after its re-evaluation, the Division denied Whiptail's completed Form C-141 and its request for closure, stating as follows:

"Closure request denied based on bullets 1 & 2.

1. Sample depth not recorded.

2. Chlorides &/or Total Petroleum Hydrocarbons not fully delineated based on closure standards established for 0 to 4 feet below grade - 19.15.29.12C(2) then to 19.15.29.13D."

*See* Exhibit 1, p. 1, attached hereto.

9. On April 21, 2022, Whiptail filed an application for a hearing pursuant to NMAC 19.15.29.12(E)(2). A number of status conferences have been held in this case since the application was filed. At the last status conference on December 15, 2022, the Division described the procedural posture of the case as follows: "I don't think that there's a factual dispute here. I do think it is a matter of rule interpretation and application of the rules, in particular 19.15.19.13. There's a provision regarding the top four feet and whether or not it needs to be reclaimed." Hearing Transcript, Case No. 22782, dated December 15, 2022, at 22:19-24. Both Whiptail and the Division have expressed their agreement that the facts are not in dispute and the outcome of the case relies on the proper construction and application of the rules.

10. Furthermore, the Division has expressed its intent to create and assign Whiptail to a new category of classification recently designed for these types of matters that, as Whiptail understands, would not provide Whiptail with closure of the incident but would maintain an open and active incident report. Under the specific facts and circumstances of this case, Whiptail views such action as an unwarranted and unnecessary burden that would result in harm to the company.

11. Because there is no dispute of material fact in these matters, Whiptail submits this Motion as a motion for summary judgment requesting closure as a matter of law based on the proper application of the rules in Part 29. *See Bauer v. College of Santa Fe*, 2003-NMCA-121, ¶ 2 (stating that summary judgment is proper when there is no genuine issue of material fact, and the moving party is entitled to judgment as a matter of law) (citations omitted).

**II. The proper methods for interpreting, construing, and apply agency rules are clearly prescribed under New Mexico Law and are presented herein as the standard for review.**

12. Under New Mexico case law, the courts construe administrative agency rules in the same manner as they interpret and construe statutes. *See New Mexico Dept. of Health v. Ulibarri* 1993-NMCA-048, ¶10; *Nmma v. N.M. Water Quality Control Comm.*, 2007-NMCA-010, ¶12 (“Agency rules are construed in the same manner as statutes”); *Bass Enters. Prod. Co. v. Mosaic Potash Carlsbad Inc.*, 2010-NMCA-065, ¶12 (same). The courts determine the intent of a rule or statute by first looking to the plain language, giving the words their ordinary meaning. *See Marbob Energy v. N.M. Oil Conservation Comm*, 2009-NMSC-013, ¶ 9. “When statutory language is clear and unambiguous, [this Court] must give effect to that language and refrain from further statutory interpretation.” *Id.* (brackets in the original) (citing *Anadarko Petroleum Corp. v. Baca*, 1994-NMSC-019; *see also State v. Maestas*, 2007-NMSC-001, ¶14 (“Unless ambiguity exists, this Court must adhere to the plain meaning of the language).”

13. Furthermore, the courts will look to each part of a statutory or regulatory scheme, reviewing how one provision may affect other provisions to produce a harmonious whole. *See Marbob* at ¶17; *Key v. Chrysler Motors Corp*, 1996-NMSC-038, ¶14 (“We are to read the statute in its entirety and construe each part in connection with every other part to produce a harmonious whole.”); *Bd. of Cnty. Comm’rs of Cnty. of Rio Arriba v. Bd. of Cmm’rs of Cnty. of Santa Fe*,

2020-NMCA-017, ¶13 (noting that the Legislature [or by analogy, the drafting agency] knows how to include or omit language if it so desires) (bracketed phrase added for clarity). Finally, when comparing provisions in this manner, the courts will acknowledge that specific language in a provision will qualify and limit the meaning of more general language. *See Marbob* at ¶ 15 (citing *Lubbock Steel & Supply, Inc. v. Gomez* 1987-NMSC-025, ¶ 6: “As a general rule of statutory construction,...general language in a statute is limited by specific language.”).

**III. Bullet 1 should not be grounds for denial of closure because Whiptail satisfied all sampling criteria, including depths, location, and concentration levels, of NMAC 19.15.29.12.**

14. In Bullet 1, the Division states that it denied closure request because “[s]ample depths not recorded.” *See* Exhibit 1, p. 1, attached hereto.

15. In response, Whiptail affirms that it strictly followed the plain language and closure requirements of Rule 19.15.29.12, and more specifically, the relevant sampling requirements of Rule 19.15.29.12D(1), which required Whiptail to “test the remediated areas for contamination with representative five-point composite samples from the walls and base, and individual grab samples from any wet or discolored areas.”

16. Whiptail did abide: As described in its WSP report under Soil Sampling Activities, Whiptail satisfied these requirements by promptly removing the top two to four inches in depth of impacted material and identifying any remaining wet or discolored areas. *See* Exhibit 1, p. 8, attached hereto. WSP then collected one composite sample from every approximately 200 sq. ft. of the impacted area at these depths, totaling 33 soil samples that covered the full extent, and potential extent, of the spill. *See id.* Such actions and activities taken by Whiptail are sufficient to satisfy the plain language of Rule 19.15.29.12(D) for proper sampling.

17. There are no specific depth measurements listed in Rule 19.15.29.12 that inform a

party of required depths for sampling; and Whiptail, in accordance with the plain language of the Rules, collected samples below the removed impacted area that covered the full extent of the spill, which was the basis of Whiptail's sampling activities in satisfaction of the "composite and grab sample plan" that form the sampling requirements under the Rules. *See, specifically*, NMAC 19.15.29.12D(1) and D(1)(b). Accordingly, Whiptail respectfully submits that it has satisfied the sampling requirements of Rule 12.15.29.12D, and therefore, OCD's objection based on sample depths, as listed in Bullet 1, should not be grounds for denial of closure

**IV. Application of NMAC 19.15.29.13 under the facts does not require Whiptail to engage in the form of reclamation, based on the four-foot rule, described in Bullet 2.**

18. In Bullet 2, the Division lists its primary reason for denying closure, stating: "Chlorides &/or Total Petroleum Hydrocarbons not fully delineated based on closure standards established for 0 to 4 feet below grade - 19.15.29.12C(2), then to 19.15.29.13D." *See* Exhibit 1, p. 1, attached hereto. The main issue in these proceedings, as described by the Division, concerns whether Whiptail is required to reclaim the top four (4) feet of the soil in the spill area pursuant to 19.15.29.13D and meet concentration standards for vegetation as described in NMAC 19.15.29.13D(1). *See* Hearing Transcript for Case No. 22782, dated December 15, 2022, at 22:19-24 (*Counsel stating*: "There's a provision regarding the top four feet and whether or not it needs to be reclaimed.").

19. First, it should be noted that "remediation" and "reclamation" are two separate processes with separate criteria regarding whether a party is required to perform either one or both for purposes of obtaining closure. *See* OCD's Letter: "Procedures for Implementation of the Spill Rule (19.15.29 NMAC)" dated September 6, 2019, Para I (stating that "[i]t is important to understand that remediation, reclamation, and restoration do not all mean the same thing.

Remediation means cleaning up or removing contaminated soils. Reclamation and/or restoration mean replacing removed material, including topsoil along with contouring of the surface to replicate the original surface drainage, and getting vegetation to grow once again.”).

20. Rule 19.15.29.12C(2), addressing Remediation and Closure, states that “[t]he responsible party shall [first] restore the impacted surface area of a release occurring on a developed well pad, central tank battery, drilling site, compressor site or other exploration, development, production, or storage sites to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and [second] restore and reclaim the area pursuant to 19.15.29.13 NMAC.” (brackets added for clarity). Thus, under the plain language of this Rule, Whiptail first is required to meet the remediation standards of Table I of 19.15.29.12 NMAC, and then “restore and reclaim the area” but only as to the requirements in and meaning of NMAC 19.15.20.13.

21. Whiptail has clearly satisfied the requirements for remediation in Rule 19.15.29.12 by providing samples with concentration levels below the threshold measurements listed in Table I of NMAC 19.15.29.12(E)(2). *See* Exhibit 1, Soil Analytic Results, pp. 11-59, attached hereto. Since Whiptail has met the concentration levels in its samplings that satisfy the requirements of, and approval for, remediation pursuant to NMAC 19.15.29.12, and more specifically, pursuant to Rule 19.15.29.12C(2), the remaining issue is whether Whiptail has also satisfied the plain language of NMAC 19.15.20.13 regarding the remaining reclamation and restoration obligations.

22. The Division claims that it cannot grant closure to Whiptail because, as stated in Bullet 2, Whiptail has not delineated Chlorides and/or Total Hydrocarbons based on standards established for 0 to 4 feet below grade, which is a standard listed only in NMAC 19.15.29.13(D)(1). Whiptail has shown herein that it has met the concentration levels prescribed

by NMAC 19.15.29.12C(2) and submits that NMAC 19.15.29.13(D)(1) and its four-foot rule for chloride concentrations less than 600 mg/kg do not apply to Whiptail under the circumstances and facts of this case.

23. As asserted in New Mexico case law, each part of a statute or rule, in this instance NMAC 19.15.29.13, must be read in relation to the other parts. *See Marbob*, 2009-NMSC-013, ¶ 17. Immediately prior to 19.15.29.13(D)(1) asserting the four-foot rule, NMAC 19.15.29.13(D) clearly states: “The responsible party shall reclaim all areas disturbed by the remediation and closure, ***except areas reasonably needed for production operations or for subsequent drilling operations***, as early and as nearly as practical to their original condition or their final land use and maintain those areas to control dust and minimize erosion to the extent practicable.” (emphasis added).

24. Thus, Rule 19.15.29.13(D), which governs and controls the meaning of its Sub-Rule 19.15.29.13(D)(1), makes an exception to the reclamation requirement, by including a phrase that carves out “areas reasonably needed for production operations” and excepts such areas from reclamation. As a result, when 19.15.29.13(D)(1) subsequently states that “[t]he reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentration less than 600 mg/kg” in order to establish vegetation, the specific carve-out phrase in 19.15.29.13(D) limits the scope and application of (D)(1) by excepting and therefore excluding from reclamation “areas reasonably needed for production operations.”

25. These interpretations and applications proposed by Whiptail for Rules 19.15.29.13(D) and (D)(1) conform precisely with the standards of construction in New Mexico case law. Since as a legal rule of interpretation and construction, the more specific language in 19.15.29.13(D) -- the language excepting areas needed for operation -- limits the meaning and

scope of the general term “reclamation,” that appears subsequently in 19.15.29.13(D)(1), the four-foot rule of (D)(1) should not apply to Whiptail’s spill area, and therefore, the four-foot rule should not be used to deny closure. *See, i.e., Marbob*, 2009-NMSC-013, ¶ 15.

26. As can be seen by photos of the spill area in Exhibit 1, p. 10, attached hereto, the spill was contained within, and only affects, areas reasonably needed for production operations. For purposes of closure, it should not be required that such areas needed for operations be primed for vegetation or re-vegetation by application of the four-foot rule. In other words, the plain language of 19.15.29.13(D) limits the four-foot rule to lands outside the areas reasonably needed for production operations, such as pasture, forest, or grass lands adjacent to areas of operation. Thus, Whiptail has satisfied the requirements for closure under Rule 19.15.29.13(D).

**V. The plain language of NMAC 19.15.29.13(E) further confirms that under the facts herein, Whiptail should be granted closure and returned to a status of compliance.**

27. The subject lands in this case are federal lands, which have separate jurisdictional considerations as identified and defined by the Division in NMAC 19.15.29.13(E). The Division’s Rules in Part 29 clearly assign the Division direct authority to oversee and enforce “remediation” and “closure” requirements on all lands pursuant to NMAC 19.15.29.12; but when the only lands involved in the spill incident are federal lands, the Rules place certain limitations and restrictions on the requirements of NMAC 19.15.29.13 as they apply to “restoration, reclamation, and re-vegetation.” *See* NMAC 19.15.29.13(E) (stating that the “surface restoration, reclamation and re-vegetation obligations imposed by federal or state agencies or tribes on lands managed or owned by those agencies *supersede* these provisions [in 19.15.29.13] and govern the obligations of any responsible party subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health, and the environment) (emphasis added).

28. Whiptail has in place with the BLM an existing reclamation plan that imposes stringent restoration, reclamation, and re-vegetation requirements, governed by the terms of the agreement itself as well as by federal regulation and statute. *See* Exhibit 5, attached hereto, showing provisions of Whiptail's existing reclamation plan with the BLM; *see also* Exhibit 6, attached hereto, showing that Whiptail assumed all obligations of the BLM reclamation agreement when Whiptail was assigned and received ownership of the transfer site from WPX SJB Gathering, LLC.

29. Therefore, under the plain language of NMAC 19.15.29.13(E), the surface restoration, reclamation, and re-vegetation obligations imposed on Whiptail by its existing plan with the BLM supersede the provisions of Rule 19.15.29.13. Consequently, under the circumstances of this case, no provision of NMAC 19.15.29.13 should act as a basis for the Division's denial of closure because the Division's approval will not preclude or prevent the protection of the lands under federal enforcement; the subject lands will receive proper restoration, reclamation, and re-vegetation measures pursuant to the federal plan in place to which Whiptail is bound and obligated.

## **VI. Conclusion:**

For the foregoing reasons, Whiptail respectfully requests that the Division grant Whiptail's Motion for Summary Judgment, and in doing so, grant full closure as a matter law for Incident ID No. nAPP2125652492/Action ID No. 61609 under the facts and circumstances of this case, thereby restoring Whiptail to a status of full compliance in these matters, based on the following findings and conclusions:

1. That there are no material facts in dispute in this case;
2. That Whiptail's samplings and testing met satisfactory concentration levels in Table I

- of NMAC 19.15.29.12(E) and that Whiptail met all criteria in NMAC 19.15.29.12 for remediation and closure;
3. That the spill was limited to areas reasonably needed for production operations, pursuant to NMAC 19.15.29.13D, and therefore, the four-foot rule in NMAC 19.15.29.13D(1) cannot be the basis for the denial of closure; and
  4. That the federal lands are currently protected by an existing reclamation agreement with the BLM which supersedes the reclamation provisions of NMAC 19.15.29.13, pursuant to NMAC 19.25.29.13(E).

Respectfully submitted,

ABADIE& SCHILL, PC

*/s/ Darin C. Savage*

---

Darin C. Savage

William E. Zimsky  
Andrew D. Schill  
214 McKenzie Street  
Santa Fe, New Mexico 87501  
Telephone: 970.385.4401  
Facsimile: 970.385.4901  
darin@abadieschill.com  
bill@abadieschill.com  
andrew@abadieschill.com

**Attorneys for Whiptail Midstream LLC**

**CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing was filed with the New Mexico Oil Conservation Division and was served on counsel of record via electronic mail on January 23, 2023:

JesseK.Tremaine@emnrd.nm.gov  
*New Mexico Oil Conservation Division*

*/s/ Darin C. Savage*

---

Darin C. Savage

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	nAPP2125652492
District RP	

Closure request denied based on bullets 1 & 2.  
 1. Sample depths not recorded  
 2. Chlorides &/or Total Petroleum Hydrocarbons not fully delineated based on closure standards established for 0 to 4 feet below grade - 19.15.29.12C (2), then to 19.15.13.D (1). See document within OCD's web site referred to as "Procedures for implementation of the Spill Rule: September 6, 2019".  
 3. Responsible party must re-submit closure report by May 25, 2022 (approximately 60 days from this notification).

**NOT APPROVED**

03/23/2022 *ll*

## Release Notification

### Responsible Party

Responsible Party Whiptail Midstream LLC	OGRID 373240
Contact Name: Ernest Johnson	Contact Telephone 918.289.2147
Contact email: ernie.johnson@whiptailmidstream.com	Incident # (assigned by OCD)
Contact mailing address 15 W. 6 <sup>th</sup> Street, Suite 2901, Tulsa, OK 74119	

### Location of Release Source

Latitude 36.265271° \_\_\_\_\_ Longitude -107.537467° \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: MC COM #160	Site Type: Transfer Location
Date Release Discovered: 9/10/2021	API# N/A

Unit Letter	Section	Township	Range	County
I	35	24N	7W	Rio Arriba

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 type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 210+ bbls	Volume Recovered (bbls) 210 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	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)

**EXHIBIT**  
**1**

Form C-141

State of New Mexico  
Oil Conservation Division

Page 2

Incident ID	nAPP2125652492
District RP	
Facility ID	
Application ID	

Cause of Release

Whiptail discovered a release on September 10, 2021, at the MC COM #160 located in section 35, T24N, R7W in Rio Arriba County. The volume of produced water released is estimated at 210+ bbls at this time, of which some bbls were released outside of containment. The release was caused by a failure in the threads of a 2 inch to 1 inch reducer fitting on the above ground line downstream of the produced water discharge pump. The discharge line where the fitting failed filled the containment with produced water mixed with some oil and the liner is believed to be compromised. Whiptail removed 210 bbls of standing liquids via vac truck and are pulling back the liner to investigate potential impact to soil. A third party contractor has been retained to oversee remediation of the release.

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release greater than 25 bbls.
---	---

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Verbal notification (via phone/voicemail) was provided to the NMOCD (Cory Smith) by Whiptail Midstream (Ernie Johnson) within 24 hours of discovering the release on 09/10/21.

### 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.

Form C-141

State of New Mexico  
Oil Conservation Division

Page 3

Incident ID	nAPP2125652492
District RP	
Facility ID	
Application ID	

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: Ernest Johnson Title: Director of Risk and Engineering Services

Signature:  Date: 9/10/21

email: ernie.johnson@whiptailmidstream.com Telephone: 918.289.2147

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Form C-141  
Page 4

State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2125652492
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?	>100(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 type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> 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><b>Characterization Report Checklist:</b> <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.</li> <li><input checked="" type="checkbox"/> Field data</li> <li><input checked="" type="checkbox"/> Data table of soil contaminant concentration data</li> <li><input checked="" type="checkbox"/> Depth to water determination</li> <li><input checked="" type="checkbox"/> Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release</li> <li><input checked="" type="checkbox"/> Boring or excavation logs</li> <li><input checked="" type="checkbox"/> Photographs including date and GIS information</li> <li><input checked="" type="checkbox"/> Topographic/Aerial maps</li> <li><input checked="" type="checkbox"/> Laboratory data including chain of custody</li> </ul>
---

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.

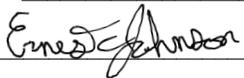
Form C-141

State of New Mexico  
Oil Conservation Division

Page 5

Incident ID	nAPP2125652492
District RP	
Facility ID	
Application ID	

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: Ernest Johnson Title: Director of Risk and Engineering Services  
 Signature:  Date: 11/12/2021  
 email: ernie.johnson@whiptailmidstream.com Telephone: (918) 289-2147

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Form C-141

State of New Mexico  
Oil Conservation Division

Page 7

Incident ID	nAPP2125652492
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: Ernest Johnson Title: Director of Risk and Engineering Services  
 Signature:  Date: 11/12/2021  
 email: ernie.johnson@whiptailmidstream.com Telephone: (918) 289-2147

**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.

<sup>NV</sup>  
 Denied  
 Closure ~~Approved~~ by:  Date: 03/23/2022  
 Printed Name: Nelson Velez Title: Environmental Specialist - Adv



November 10, 2021

New Mexico Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

**Subject: Closure Request  
Whiptail Midstream LLC.  
MC COM #160  
Incident #NAPP2125652492  
Rio Arriba County, New Mexico**

To Whom It May Concern:

WSP USA Inc. (WSP), on behalf of Whiptail Midstream, LLC (Whiptail), presents the following Closure Request (Request) detailing soil sampling and remediation activities at the MC COM #160 (Site). The Site is located in Section 35, Township 24 North, Range 7 West, in Rio Arriba County, New Mexico (Figure 1). The purpose of the soil sampling activities was to confirm the presence or absence of impacts to soil following a release of produced water at the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, Whiptail is submitting this Closure Request for the release at the Site.

## RELEASE BACKGROUND

On September 10, 2021, a failure in the threads of 2-inch to 1-inch reducer fitting on an aboveground pipeline downstream of the produced water discharge pump caused a release of produced water. The release filled the lined containment area and a small amount of fluid flowed outside the containment area. This release caused 210 barrels (bbls) of produced water to be released onto the ground. Using a vacuum truck, approximately 210 bbls of fluid were recovered within the containment area. Following the release, Whiptail personnel used hand tools and a hydro-vac to remove the top two to four inches of material (comprised of soil and gravel) with observable odors and/or staining. Approximately 51 cubic yards of material were removed and disposed of offsite at Envirotech, Inc. Landfarm (Envirotech), located in Farmington, New Mexico.

Whiptail provided immediate notification of the release to the New Mexico Oil Conservation Division (NMOCD) via phone/email to Cory Smith on September 10, 2021. A Release Notification and Corrective Action Form C-141 (Form C-141) was submitted to the NMOCD on September 10, 2021. The NMOCD assigned incident number NAPP2125652492 to the release.

## SITE DESCRIPTION AND CHARACTERIZATION

WSP characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of State Engineer (NMOSE) well SJ 01507, located approximately 2.42 miles southwest of the Site. The groundwater well has a depth to groundwater of approximately 900 feet bgs and a total depth of 1,709 feet bgs. Ground surface elevation at the groundwater well location is approximately 7,247 feet above mean sea level (amsl), which is approximately 426 feet higher in elevation than the Site.

The closest significant watercourse to the Site is an intermittent dry wash, and a first order tributary to Johnson Canyon, located approximately 1,078 feet north of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or

WSP USA  
848 EAST 2ND AVENUE  
DURANGO, CO 81301

Tel.: 970-385-1096  
wsp.com



wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low potential karst area. Figure 2 shows the Site in relation to the above potential receptors.

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

## SOIL SAMPLING ACTIVITIES

Whiptail personnel removed the top two to four inches of impacted material immediately after the release occurred. Due to heavy density of existing above- and below-ground active infrastructure, soil removal inside the containment was limited to manual removal with shovels. Whiptail used a hydro-vac to remove impacted soil outside the containment area. Figure 3 shows the general area of the Site impacted by the release. On September 28, 2021, WSP collected soil samples from the area of the release to assess the presence or absence of impacted soil following the initial excavation activities. One composite sample was collected from every approximately 200 square feet of the impacted area, totaling 33 composite soil samples. Each composite sample consisted of five aliquot soil samples. Aliquot points were composited by adding the soil to a sealed Ziplock bag, homogenizing the material within the bag, and collecting a sample from the homogenized material. Figure 3 depicts the area of the release and the thirty-three areas from which composite samples were collected. Because the excavation was so shallow, samples were representative of the sidewalls and floor of the excavation.

The composite soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico for the following analysis:

- BTEX by United States Environmental Protection Agency (EPA) Method 8021B
- TPH-GRO, TPH-DRO, and TPH-motor oil range organics (MRO) by EPA Method 8015M/D
- Chloride by EPA Method 300.0

## ANALYTICAL RESULTS

Analytical results indicated that TPH concentrations ranged from below laboratory reporting limits (SS06, SS07, SS09, SS13, SS14, SS23, SS27, SS28 SS31, and SS33) to 890 milligrams per kilogram (mg/kg) in SS25. All TPH concentrations were below the NMOCD closure criteria. BTEX compounds were not detected in any of the composite soil samples above laboratory-reporting limits. Chloride concentrations ranged from below laboratory reporting limits in SS31 to 3,100 mg/kg in SS20 and SS30 and were compliant with NMOCD Table 1 Closure Criteria. Laboratory analytical reports and COC documentation for the composite soil samples are included as Enclosure A. Analytical results are summarized on Table 1. A photographic log from the sampling is included as Enclosure B.

## CLOSURE REQUEST

Following the release, Whiptail initiated excavation efforts around active infrastructure and equipment removing as much impacted soil as practicable without disrupting active operations. Confirmation soil-sampling activities conducted by WSP indicated that the laboratory analytical results for all composite soil samples were below the NMOCD Table 1 Closure Criteria.



Based on the results presented in this report, impacted soil has been remediated at the Site. In accordance with 19.15.29.12 E NMAC, Whiptail is requesting no further action for this release.

If you have any questions or comments, please do not hesitate to contact Ms. Brooke Herb at (970) 385-1096.

Kind regards,

A handwritten signature in black ink, appearing to read 'Josh Adams'.

Josh Adams, P.G.  
Geologist

A handwritten signature in black ink, appearing to read 'Brooke Herb'.

Brooke Herb  
Senior Geologist

Enclosures:

Figure 1 – Site Location Map

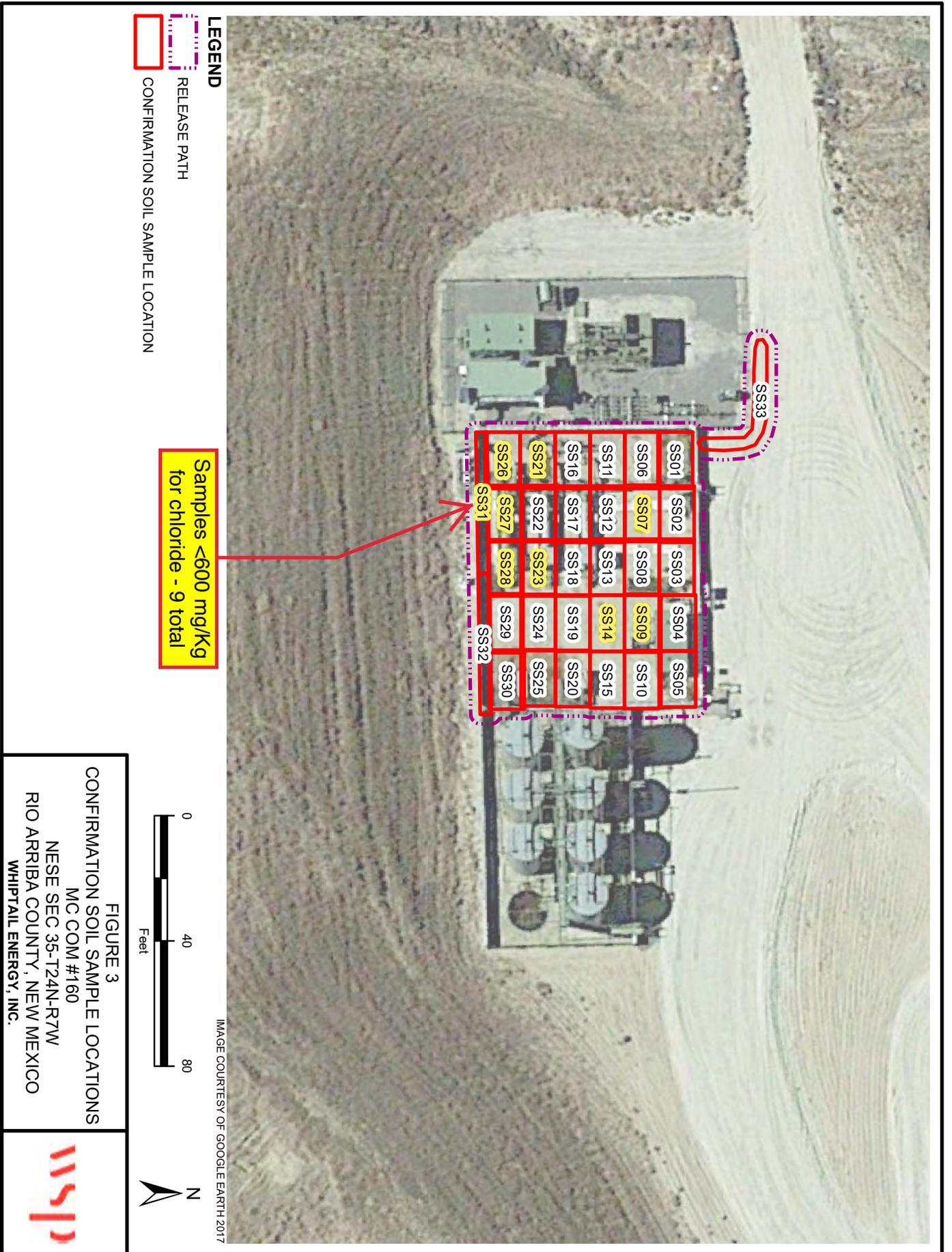
Figure 2 – Receptor Map

Figure 3 – Confirmation Soil Sample Locations

Table 1 – Soil Analytical Results

Enclosure A: Laboratory Analytical Report

Enclosure B: Photographic Log



**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**MC COM #160**  
**RIO ARRIBA COUNTY, NEW MEXICO**  
**WHIPTAIL MIDSTREAM LLC**

Soil Sample Identification	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	GRO+DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
SS01	9/28/2021	<0.12	<0.23	<0.23	<0.47	<0.47	1,700	<23	23	23	<49	23
SS02	9/28/2021	<0.023	<0.046	<0.046	<0.093	<0.093	2,100	<4.6	11	11	<49	11
SS03	9/28/2021	<0.024	<0.049	<0.049	<0.097	<0.097	2,300	<4.9	160	160	190	350
SS04	9/28/2021	<0.024	<0.048	<0.048	<0.097	<0.097	2,500	<4.8	30	30	<48	30
SS05	9/28/2021	<0.025	<0.050	<0.050	<0.10	<0.10	1,400	<5.0	21	21	<49	21
SS06	9/28/2021	<0.023	<0.047	<0.047	<0.094	<0.094	620	<4.7	<9.6	<9.6	<48	<48
SS07	9/28/2021	<0.023	<0.046	<0.046	<0.093	<0.093	380	<4.6	<9.8	<9.8	<49	<49
SS08	9/28/2021	<0.12	<0.24	<0.24	<0.48	<0.48	2,100	<24	210	210	150	360
SS09	9/28/2021	<0.024	<0.048	<0.048	<0.097	<0.097	130	<4.8	<9.9	<9.9	<50	<50
SS10	9/28/2021	<0.012	<0.024	<0.024	<0.048	<0.048	2,200	<24	150	150	130	280
SS11	9/28/2021	<0.012	<0.023	<0.023	<0.047	<0.047	2,700	<23	330	330	270	600
SS12	9/28/2021	<0.024	<0.047	<0.047	<0.095	<0.095	2,100	<4.7	54	54	56	110
SS13	9/28/2021	<0.024	<0.047	<0.047	<0.094	<0.094	860	<4.7	<8.6	<8.6	<43	<43
SS14	9/28/2021	<0.025	<0.049	<0.049	<0.098	<0.098	80	<4.9	<9.2	<9.2	<46	<46
SS15	9/28/2021	<0.012	<0.024	<0.024	<0.048	<0.048	2,200	<24	150	150	130	280
SS16	9/28/2021	<0.025	<0.050	<0.050	<0.10	<0.10	870	<5.0	47	47	61	108
SS17	9/28/2021	<0.025	<0.049	<0.049	<0.099	<0.099	2,100	<4.9	92	92	130	222
SS18	9/28/2021	<0.024	<0.048	<0.048	<0.097	<0.097	630	<4.8	76	76	140	216
SS19	9/28/2021	<0.024	<0.047	<0.047	<0.095	<0.095	1,500	<4.7	9.8	9.8	<46	9.8
SS20	9/28/2021	<0.025	<0.050	<0.050	<0.099	<0.099	3,100	<5.0	70	70	67	137
SS21	9/28/2021	<0.024	<0.048	<0.048	<0.097	<0.097	520	<4.8	10	10	<44	10
SS22	9/28/2021	<0.012	<0.024	<0.024	<0.048	<0.048	960	<24	150	150	150	300
SS23	9/28/2021	<0.024	<0.047	<0.047	<0.095	<0.095	230	<4.7	<9.1	<9.1	<46	<46
SS24	9/28/2021	<0.012	<0.024	<0.024	<0.048	<0.048	1,400	<24	290	290	250	540
SS25	9/28/2021	<0.012	<0.024	<0.024	<0.047	<0.047	3,000	<24	490	490	400	890
SS26	9/28/2021	<0.024	<0.048	<0.048	<0.096	<0.096	190	<4.8	13	13	<48	13
SS27	9/28/2021	<0.025	<0.050	<0.050	<0.099	<0.099	550	<5.0	<9.1	<9.1	<45	<45
SS28	9/28/2021	<0.025	<0.050	<0.050	<0.10	<0.10	140	<5.0	<9.4	<9.4	<47	<47

**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**MC COM #160**  
**RIO ARRIBA COUNTY, NEW MEXICO**  
**WHIPTAIL MIDSTREAM LLC**

Soil Sample Identification	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	GRO+DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
SS29	9/28/2021	<0.024	<0.048	<0.048	<0.097	<0.097	2,200	<4.8	150	150	180	330
SS30	9/28/2021	<0.12	<0.24	<0.24	<0.48	<0.48	3,100	<24	300	300	230	530
SS31	9/28/2021	<0.024	<0.049	<0.049	<0.098	<0.098	<60	<4.9	<9.6	<9.6	<48	<48
SS32	9/28/2021	<0.12	<0.24	<0.24	<0.49	<0.49	1,600	<24	240	240	230	470
SS33	9/28/2021	<0.024	<0.048	<0.048	<0.096	<0.049	2,500	<4.8	<9.8	<9.8	<49	<49
<b>NMOCD Closure Criteria</b>		<b>10</b>	NE	NE	NE	<b>50</b>	<b>20,000</b>	NE	NE	<b>1,000</b>	NE	<b>2,500</b>

**NOTES:**

BTEX - benzene, toluene, ethylbenzene, and total xylenes analyzed by US EPA Method 8021B

DRO - diesel range organics analyzed by US EPA Method 8015D

GRO - gasoline range organics analyzed by US EPA Method 8015D  
 mg/kg - milligrams per kilogram

MRO - motor oil range organics analyzed by US EPA method 8015D

NE - not established

NMOCD - New Mexico Oil Conservation Division

TPH - total petroleum hydrocarbon (sum of GRO, DRO, and MRO)

< - indicates result is less than the stated laboratory reporting limit

**Bold** - indicates value exceeds stated NMOCD Closure Criteria

ENCLOSURE A – LABORATORY ANALYTICAL REPORTS



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

October 15, 2021

Brooke Herb  
WSP  
848 East 2nd Avenue  
Durango, CO 81301  
TEL: (970) 946-1093  
FAX

RE: MC COM 160

OrderNo.: 2109H25

Dear Brooke Herb:

Hall Environmental Analysis Laboratory received 33 sample(s) on 9/30/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS01

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:20:00 PM

**Lab ID:** 2109H25-001

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	23	9.7		mg/Kg	1	10/7/2021 9:22:47 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/7/2021 9:22:47 PM
Surr: DNOP	110	70-130		%Rec	1	10/7/2021 9:22:47 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	23		mg/Kg	5	10/5/2021 10:55:40 PM
Surr: BFB	98.3	70-130		%Rec	5	10/5/2021 10:55:40 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 10:55:40 PM
Toluene	ND	0.23		mg/Kg	5	10/5/2021 10:55:40 PM
Ethylbenzene	ND	0.23		mg/Kg	5	10/5/2021 10:55:40 PM
Xylenes, Total	ND	0.47		mg/Kg	5	10/5/2021 10:55:40 PM
Surr: 4-Bromofluorobenzene	85.3	70-130		%Rec	5	10/5/2021 10:55:40 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	1700	59		mg/Kg	20	10/6/2021 7:00:07 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS02

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:22:00 PM

**Lab ID:** 2109H25-002

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	11	9.8		mg/Kg	1	10/8/2021 9:53:38 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/8/2021 9:53:38 PM
Surr: DNOP	103	70-130		%Rec	1	10/8/2021 9:53:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/5/2021 11:19:13 PM
Surr: BFB	93.0	70-130		%Rec	1	10/5/2021 11:19:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.023		mg/Kg	1	10/5/2021 11:19:13 PM
Toluene	ND	0.046		mg/Kg	1	10/5/2021 11:19:13 PM
Ethylbenzene	ND	0.046		mg/Kg	1	10/5/2021 11:19:13 PM
Xylenes, Total	ND	0.093		mg/Kg	1	10/5/2021 11:19:13 PM
Surr: 4-Bromofluorobenzene	82.6	70-130		%Rec	1	10/5/2021 11:19:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2100	61		mg/Kg	20	10/6/2021 8:02:09 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS03

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:23:00 PM

**Lab ID:** 2109H25-003

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	160	9.8		mg/Kg	1	10/8/2021 10:17:55 PM
Motor Oil Range Organics (MRO)	190	49		mg/Kg	1	10/8/2021 10:17:55 PM
Surr: DNOP	111	70-130		%Rec	1	10/8/2021 10:17:55 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/5/2021 11:42:39 PM
Surr: BFB	92.7	70-130		%Rec	1	10/5/2021 11:42:39 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 11:42:39 PM
Toluene	ND	0.049		mg/Kg	1	10/5/2021 11:42:39 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/5/2021 11:42:39 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/5/2021 11:42:39 PM
Surr: 4-Bromofluorobenzene	82.5	70-130		%Rec	1	10/5/2021 11:42:39 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2300	60		mg/Kg	20	10/6/2021 8:39:23 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS04

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:25:00 PM

**Lab ID:** 2109H25-004

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	30	9.7		mg/Kg	1	10/8/2021 10:42:14 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/8/2021 10:42:14 PM
Surr: DNOP	108	70-130		%Rec	1	10/8/2021 10:42:14 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/6/2021 12:06:05 AM
Surr: BFB	94.3	70-130		%Rec	1	10/6/2021 12:06:05 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	10/6/2021 12:06:05 AM
Toluene	ND	0.048		mg/Kg	1	10/6/2021 12:06:05 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/6/2021 12:06:05 AM
Xylenes, Total	ND	0.097		mg/Kg	1	10/6/2021 12:06:05 AM
Surr: 4-Bromofluorobenzene	85.1	70-130		%Rec	1	10/6/2021 12:06:05 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2500	150		mg/Kg	50	10/7/2021 11:19:13 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS05

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:27:00 PM

**Lab ID:** 2109H25-005

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	21	9.9		mg/Kg	1	10/8/2021 11:06:31 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/8/2021 11:06:31 PM
Surr: DNOP	107	70-130		%Rec	1	10/8/2021 11:06:31 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/6/2021 12:29:29 AM
Surr: BFB	92.1	70-130		%Rec	1	10/6/2021 12:29:29 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.025		mg/Kg	1	10/6/2021 12:29:29 AM
Toluene	ND	0.050		mg/Kg	1	10/6/2021 12:29:29 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/6/2021 12:29:29 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/6/2021 12:29:29 AM
Surr: 4-Bromofluorobenzene	81.9	70-130		%Rec	1	10/6/2021 12:29:29 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	1400	60		mg/Kg	20	10/6/2021 9:04:11 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS06

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:31:00 PM

**Lab ID:** 2109H25-006

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/8/2021 11:30:45 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/8/2021 11:30:45 PM
Surr: DNOP	110	70-130		%Rec	1	10/8/2021 11:30:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/6/2021 2:03:08 AM
Surr: BFB	95.2	70-130		%Rec	1	10/6/2021 2:03:08 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.023		mg/Kg	1	10/6/2021 2:03:08 AM
Toluene	ND	0.047		mg/Kg	1	10/6/2021 2:03:08 AM
Ethylbenzene	ND	0.047		mg/Kg	1	10/6/2021 2:03:08 AM
Xylenes, Total	ND	0.094		mg/Kg	1	10/6/2021 2:03:08 AM
Surr: 4-Bromofluorobenzene	85.4	70-130		%Rec	1	10/6/2021 2:03:08 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	620	59		mg/Kg	20	10/6/2021 9:16:36 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS07

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:33:00 PM

**Lab ID:** 2109H25-007

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/8/2021 11:54:57 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/8/2021 11:54:57 PM
Surr: DNOP	107	70-130		%Rec	1	10/8/2021 11:54:57 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/6/2021 2:26:29 AM
Surr: BFB	94.8	70-130		%Rec	1	10/6/2021 2:26:29 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.023		mg/Kg	1	10/6/2021 2:26:29 AM
Toluene	ND	0.046		mg/Kg	1	10/6/2021 2:26:29 AM
Ethylbenzene	ND	0.046		mg/Kg	1	10/6/2021 2:26:29 AM
Xylenes, Total	ND	0.093		mg/Kg	1	10/6/2021 2:26:29 AM
Surr: 4-Bromofluorobenzene	84.7	70-130		%Rec	1	10/6/2021 2:26:29 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	380	60		mg/Kg	20	10/6/2021 9:29:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS08

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:35:00 PM

**Lab ID:** 2109H25-008

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	210	9.4		mg/Kg	1	10/9/2021 12:19:06 AM
Motor Oil Range Organics (MRO)	150	47		mg/Kg	1	10/9/2021 12:19:06 AM
Surr: DNOP	113	70-130		%Rec	1	10/9/2021 12:19:06 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/6/2021 2:49:58 AM
Surr: BFB	94.7	70-130		%Rec	5	10/6/2021 2:49:58 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.12		mg/Kg	5	10/6/2021 2:49:58 AM
Toluene	ND	0.24		mg/Kg	5	10/6/2021 2:49:58 AM
Ethylbenzene	ND	0.24		mg/Kg	5	10/6/2021 2:49:58 AM
Xylenes, Total	ND	0.48		mg/Kg	5	10/6/2021 2:49:58 AM
Surr: 4-Bromofluorobenzene	85.0	70-130		%Rec	5	10/6/2021 2:49:58 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2100	60		mg/Kg	20	10/6/2021 9:41:24 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS09

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:37:00 PM

**Lab ID:** 2109H25-009

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/9/2021 12:43:18 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/9/2021 12:43:18 AM
Surr: DNOP	112	70-130		%Rec	1	10/9/2021 12:43:18 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/6/2021 3:13:37 AM
Surr: BFB	92.8	70-130		%Rec	1	10/6/2021 3:13:37 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	10/6/2021 3:13:37 AM
Toluene	ND	0.048		mg/Kg	1	10/6/2021 3:13:37 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/6/2021 3:13:37 AM
Xylenes, Total	ND	0.097		mg/Kg	1	10/6/2021 3:13:37 AM
Surr: 4-Bromofluorobenzene	82.6	70-130		%Rec	1	10/6/2021 3:13:37 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	130	60		mg/Kg	20	10/6/2021 9:53:49 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS10

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:39:00 PM

**Lab ID:** 2109H25-010

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	150	9.1		mg/Kg	1	10/9/2021 1:55:58 AM
Motor Oil Range Organics (MRO)	130	45		mg/Kg	1	10/9/2021 1:55:58 AM
Surr: DNOP	107	70-130		%Rec	1	10/9/2021 1:55:58 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/5/2021 10:19:00 AM
Surr: BFB	110	70-130		%Rec	5	10/5/2021 10:19:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 10:19:00 AM
Toluene	ND	0.24		mg/Kg	5	10/5/2021 10:19:00 AM
Ethylbenzene	ND	0.24		mg/Kg	5	10/5/2021 10:19:00 AM
Xylenes, Total	ND	0.48		mg/Kg	5	10/5/2021 10:19:00 AM
Surr: 4-Bromofluorobenzene	97.5	70-130		%Rec	5	10/5/2021 10:19:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2200	60		mg/Kg	20	10/6/2021 10:31:02 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS11

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:41:00 PM

**Lab ID:** 2109H25-011

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	330	10		mg/Kg	1	10/9/2021 4:43:12 PM
Motor Oil Range Organics (MRO)	270	50		mg/Kg	1	10/9/2021 4:43:12 PM
Surr: DNOP	115	70-130		%Rec	1	10/9/2021 4:43:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	23		mg/Kg	5	10/5/2021 11:18:00 AM
Surr: BFB	109	70-130		%Rec	5	10/5/2021 11:18:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 11:18:00 AM
Toluene	ND	0.23		mg/Kg	5	10/5/2021 11:18:00 AM
Ethylbenzene	ND	0.23		mg/Kg	5	10/5/2021 11:18:00 AM
Xylenes, Total	ND	0.47		mg/Kg	5	10/5/2021 11:18:00 AM
Surr: 4-Bromofluorobenzene	96.9	70-130		%Rec	5	10/5/2021 11:18:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2700	150		mg/Kg	50	10/7/2021 11:31:38 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS12

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:43:00 PM

**Lab ID:** 2109H25-012

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	54	9.6		mg/Kg	1	10/9/2021 3:08:25 AM
Motor Oil Range Organics (MRO)	56	48		mg/Kg	1	10/9/2021 3:08:25 AM
Surr: DNOP	104	70-130		%Rec	1	10/9/2021 3:08:25 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/5/2021 12:16:00 PM
Surr: BFB	101	70-130		%Rec	1	10/5/2021 12:16:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 12:16:00 PM
Toluene	ND	0.047		mg/Kg	1	10/5/2021 12:16:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/5/2021 12:16:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/5/2021 12:16:00 PM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	10/5/2021 12:16:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2100	60		mg/Kg	20	10/6/2021 10:55:51 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS13

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:45:00 PM

**Lab ID:** 2109H25-013

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	10/9/2021 3:32:30 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	10/9/2021 3:32:30 AM
Surr: DNOP	103	70-130		%Rec	1	10/9/2021 3:32:30 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/5/2021 12:36:00 PM
Surr: BFB	105	70-130		%Rec	1	10/5/2021 12:36:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 12:36:00 PM
Toluene	ND	0.047		mg/Kg	1	10/5/2021 12:36:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/5/2021 12:36:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	10/5/2021 12:36:00 PM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	10/5/2021 12:36:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	860	60		mg/Kg	20	10/6/2021 11:08:15 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS14

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:47:00 PM

**Lab ID:** 2109H25-014

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/9/2021 4:20:35 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/9/2021 4:20:35 AM
Surr: DNOP	104	70-130		%Rec	1	10/9/2021 4:20:35 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/5/2021 12:56:00 PM
Surr: BFB	98.8	70-130		%Rec	1	10/5/2021 12:56:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.025		mg/Kg	1	10/5/2021 12:56:00 PM
Toluene	ND	0.049		mg/Kg	1	10/5/2021 12:56:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/5/2021 12:56:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/5/2021 12:56:00 PM
Surr: 4-Bromofluorobenzene	91.1	70-130		%Rec	1	10/5/2021 12:56:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	80	60		mg/Kg	20	10/6/2021 11:20:40 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS15

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:49:00 PM

**Lab ID:** 2109H25-015

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	150	9.5		mg/Kg	1	10/9/2021 4:44:36 AM
Motor Oil Range Organics (MRO)	130	47		mg/Kg	1	10/9/2021 4:44:36 AM
Surr: DNOP	108	70-130		%Rec	1	10/9/2021 4:44:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/5/2021 1:15:00 PM
Surr: BFB	112	70-130		%Rec	5	10/5/2021 1:15:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 1:15:00 PM
Toluene	ND	0.24		mg/Kg	5	10/5/2021 1:15:00 PM
Ethylbenzene	ND	0.24		mg/Kg	5	10/5/2021 1:15:00 PM
Xylenes, Total	ND	0.48		mg/Kg	5	10/5/2021 1:15:00 PM
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	5	10/5/2021 1:15:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2200	60		mg/Kg	20	10/6/2021 11:33:04 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS16

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:50:00 PM

**Lab ID:** 2109H25-016

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	47	9.5		mg/Kg	1	10/9/2021 5:08:35 AM
Motor Oil Range Organics (MRO)	61	47		mg/Kg	1	10/9/2021 5:08:35 AM
Surr: DNOP	104	70-130		%Rec	1	10/9/2021 5:08:35 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/5/2021 1:35:00 PM
Surr: BFB	101	70-130		%Rec	1	10/5/2021 1:35:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.025		mg/Kg	1	10/5/2021 1:35:00 PM
Toluene	ND	0.050		mg/Kg	1	10/5/2021 1:35:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/5/2021 1:35:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/5/2021 1:35:00 PM
Surr: 4-Bromofluorobenzene	86.2	70-130		%Rec	1	10/5/2021 1:35:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	870	60		mg/Kg	20	10/6/2021 11:45:29 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order 2109H25

Date Reported: 10/15/2021

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS17

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:42:00 PM

**Lab ID:** 2109H25-017

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	92	9.5		mg/Kg	1	10/9/2021 4:19:14 PM
Motor Oil Range Organics (MRO)	130	47		mg/Kg	1	10/9/2021 4:19:14 PM
Surr: DNOP	110	70-130		%Rec	1	10/9/2021 4:19:14 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/5/2021 1:54:00 PM
Surr: BFB	107	70-130		%Rec	1	10/5/2021 1:54:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.025		mg/Kg	1	10/5/2021 1:54:00 PM
Toluene	ND	0.049		mg/Kg	1	10/5/2021 1:54:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/5/2021 1:54:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/5/2021 1:54:00 PM
Surr: 4-Bromofluorobenzene	90.9	70-130		%Rec	1	10/5/2021 1:54:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2100	59		mg/Kg	20	10/6/2021 11:57:53 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS18

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:53:00 PM

**Lab ID:** 2109H25-018

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	76	10		mg/Kg	1	10/9/2021 5:32:30 AM
Motor Oil Range Organics (MRO)	140	50		mg/Kg	1	10/9/2021 5:32:30 AM
Surr: DNOP	108	70-130		%Rec	1	10/9/2021 5:32:30 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/5/2021 2:14:00 PM
Surr: BFB	102	70-130		%Rec	1	10/5/2021 2:14:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 2:14:00 PM
Toluene	ND	0.048		mg/Kg	1	10/5/2021 2:14:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/5/2021 2:14:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/5/2021 2:14:00 PM
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	10/5/2021 2:14:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	630	60		mg/Kg	20	10/7/2021 12:10:18 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS19

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:56:00 PM

**Lab ID:** 2109H25-019

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	9.8	9.2		mg/Kg	1	10/9/2021 5:56:26 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/9/2021 5:56:26 AM
Surr: DNOP	104	70-130		%Rec	1	10/9/2021 5:56:26 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/5/2021 2:34:00 PM
Surr: BFB	107	70-130		%Rec	1	10/5/2021 2:34:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 2:34:00 PM
Toluene	ND	0.047		mg/Kg	1	10/5/2021 2:34:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/5/2021 2:34:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/5/2021 2:34:00 PM
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	10/5/2021 2:34:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	1500	60		mg/Kg	20	10/7/2021 12:22:42 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS20

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:57:00 PM

**Lab ID:** 2109H25-020

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	70	9.3		mg/Kg	1	10/9/2021 6:20:13 AM
Motor Oil Range Organics (MRO)	67	47		mg/Kg	1	10/9/2021 6:20:13 AM
Surr: DNOP	105	70-130		%Rec	1	10/9/2021 6:20:13 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/5/2021 3:33:00 PM
Surr: BFB	101	70-130		%Rec	1	10/5/2021 3:33:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.025		mg/Kg	1	10/5/2021 3:33:00 PM
Toluene	ND	0.050		mg/Kg	1	10/5/2021 3:33:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/5/2021 3:33:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/5/2021 3:33:00 PM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	10/5/2021 3:33:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	3100	150		mg/Kg	50	10/7/2021 11:44:02 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS21

**Project:** MC COM 160

**Collection Date:** 9/28/2021 2:59:00 PM

**Lab ID:** 2109H25-021

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	10	8.9		mg/Kg	1	10/9/2021 6:43:51 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	10/9/2021 6:43:51 AM
Surr: DNOP	105	70-130		%Rec	1	10/9/2021 6:43:51 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/5/2021 3:52:00 PM
Surr: BFB	96.1	70-130		%Rec	1	10/5/2021 3:52:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 3:52:00 PM
Toluene	ND	0.048		mg/Kg	1	10/5/2021 3:52:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/5/2021 3:52:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/5/2021 3:52:00 PM
Surr: 4-Bromofluorobenzene	87.8	70-130		%Rec	1	10/5/2021 3:52:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	520	60		mg/Kg	20	10/7/2021 2:32:16 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS22

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:00:00 PM

**Lab ID:** 2109H25-022

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	150	9.6		mg/Kg	1	10/9/2021 7:07:36 AM
Motor Oil Range Organics (MRO)	150	48		mg/Kg	1	10/9/2021 7:07:36 AM
Surr: DNOP	114	70-130		%Rec	1	10/9/2021 7:07:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/5/2021 4:12:00 PM
Surr: BFB	110	70-130		%Rec	5	10/5/2021 4:12:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 4:12:00 PM
Toluene	ND	0.24		mg/Kg	5	10/5/2021 4:12:00 PM
Ethylbenzene	ND	0.24		mg/Kg	5	10/5/2021 4:12:00 PM
Xylenes, Total	ND	0.48		mg/Kg	5	10/5/2021 4:12:00 PM
Surr: 4-Bromofluorobenzene	96.5	70-130		%Rec	5	10/5/2021 4:12:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	960	60		mg/Kg	20	10/7/2021 3:09:29 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order 2109H25

Date Reported: 10/15/2021

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS23

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:02:00 PM

**Lab ID:** 2109H25-023

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	10/9/2021 7:31:21 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/9/2021 7:31:21 AM
Surr: DNOP	103	70-130		%Rec	1	10/9/2021 7:31:21 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/5/2021 4:32:00 PM
Surr: BFB	102	70-130		%Rec	1	10/5/2021 4:32:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 4:32:00 PM
Toluene	ND	0.047		mg/Kg	1	10/5/2021 4:32:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/5/2021 4:32:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/5/2021 4:32:00 PM
Surr: 4-Bromofluorobenzene	90.4	70-130		%Rec	1	10/5/2021 4:32:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	230	60		mg/Kg	20	10/7/2021 3:46:45 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS24

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:04:00 PM

**Lab ID:** 2109H25-024

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	290	9.9		mg/Kg	1	10/9/2021 7:55:13 AM
Motor Oil Range Organics (MRO)	250	50		mg/Kg	1	10/9/2021 7:55:13 AM
Surr: DNOP	107	70-130		%Rec	1	10/9/2021 7:55:13 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/5/2021 4:51:00 PM
Surr: BFB	108	70-130		%Rec	5	10/5/2021 4:51:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 4:51:00 PM
Toluene	ND	0.24		mg/Kg	5	10/5/2021 4:51:00 PM
Ethylbenzene	ND	0.24		mg/Kg	5	10/5/2021 4:51:00 PM
Xylenes, Total	ND	0.48		mg/Kg	5	10/5/2021 4:51:00 PM
Surr: 4-Bromofluorobenzene	98.4	70-130		%Rec	5	10/5/2021 4:51:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	1400	60		mg/Kg	20	10/7/2021 3:59:10 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS25

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:06:00 PM

**Lab ID:** 2109H25-025

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	490	9.8		mg/Kg	1	10/9/2021 5:07:10 PM
Motor Oil Range Organics (MRO)	400	49		mg/Kg	1	10/9/2021 5:07:10 PM
Surr: DNOP	114	70-130		%Rec	1	10/9/2021 5:07:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/5/2021 5:11:00 PM
Surr: BFB	113	70-130		%Rec	5	10/5/2021 5:11:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 5:11:00 PM
Toluene	ND	0.24		mg/Kg	5	10/5/2021 5:11:00 PM
Ethylbenzene	ND	0.24		mg/Kg	5	10/5/2021 5:11:00 PM
Xylenes, Total	ND	0.47		mg/Kg	5	10/5/2021 5:11:00 PM
Surr: 4-Bromofluorobenzene	96.1	70-130		%Rec	5	10/5/2021 5:11:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	3000	150		mg/Kg	50	10/8/2021 7:18:20 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS26

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:10:00 PM

**Lab ID:** 2109H25-026

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	13	9.6		mg/Kg	1	10/9/2021 8:19:07 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/9/2021 8:19:07 AM
Surr: DNOP	102	70-130		%Rec	1	10/9/2021 8:19:07 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/5/2021 5:30:00 PM
Surr: BFB	100	70-130		%Rec	1	10/5/2021 5:30:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 5:30:00 PM
Toluene	ND	0.048		mg/Kg	1	10/5/2021 5:30:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/5/2021 5:30:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/5/2021 5:30:00 PM
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	1	10/5/2021 5:30:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	190	60		mg/Kg	20	10/7/2021 7:42:36 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS27

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:11:00 PM

**Lab ID:** 2109H25-027

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	10/9/2021 8:43:06 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	10/9/2021 8:43:06 AM
Surr: DNOP	100	70-130		%Rec	1	10/9/2021 8:43:06 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/5/2021 5:50:00 PM
Surr: BFB	100	70-130		%Rec	1	10/5/2021 5:50:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.025		mg/Kg	1	10/5/2021 5:50:00 PM
Toluene	ND	0.050		mg/Kg	1	10/5/2021 5:50:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/5/2021 5:50:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/5/2021 5:50:00 PM
Surr: 4-Bromofluorobenzene	88.9	70-130		%Rec	1	10/5/2021 5:50:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	550	60		mg/Kg	20	10/7/2021 7:55:01 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS28

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:12:00 PM

**Lab ID:** 2109H25-028

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/9/2021 9:07:03 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/9/2021 9:07:03 AM
Surr: DNOP	102	70-130		%Rec	1	10/9/2021 9:07:03 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/5/2021 6:10:00 PM
Surr: BFB	97.7	70-130		%Rec	1	10/5/2021 6:10:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.025		mg/Kg	1	10/5/2021 6:10:00 PM
Toluene	ND	0.050		mg/Kg	1	10/5/2021 6:10:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/5/2021 6:10:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/5/2021 6:10:00 PM
Surr: 4-Bromofluorobenzene	88.8	70-130		%Rec	1	10/5/2021 6:10:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	140	61		mg/Kg	20	10/7/2021 8:07:26 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS29

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:14:00 PM

**Lab ID:** 2109H25-029

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	150	9.8		mg/Kg	1	10/9/2021 9:31:03 AM
Motor Oil Range Organics (MRO)	180	49		mg/Kg	1	10/9/2021 9:31:03 AM
Surr: DNOP	107	70-130		%Rec	1	10/9/2021 9:31:03 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/5/2021 6:29:00 PM
Surr: BFB	97.9	70-130		%Rec	1	10/5/2021 6:29:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 6:29:00 PM
Toluene	ND	0.048		mg/Kg	1	10/5/2021 6:29:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/5/2021 6:29:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/5/2021 6:29:00 PM
Surr: 4-Bromofluorobenzene	86.7	70-130		%Rec	1	10/5/2021 6:29:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	2200	60		mg/Kg	20	10/7/2021 8:19:51 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS30

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:15:00 PM

**Lab ID:** 2109H25-030

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	300	9.6		mg/Kg	1	10/5/2021 12:11:12 PM
Motor Oil Range Organics (MRO)	230	48		mg/Kg	1	10/5/2021 12:11:12 PM
Surr: DNOP	110	70-130		%Rec	1	10/5/2021 12:11:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/5/2021 8:27:00 PM
Surr: BFB	103	70-130		%Rec	5	10/5/2021 8:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 8:27:00 PM
Toluene	ND	0.24		mg/Kg	5	10/5/2021 8:27:00 PM
Ethylbenzene	ND	0.24		mg/Kg	5	10/5/2021 8:27:00 PM
Xylenes, Total	ND	0.48		mg/Kg	5	10/5/2021 8:27:00 PM
Surr: 4-Bromofluorobenzene	91.4	70-130		%Rec	5	10/5/2021 8:27:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	3100	150		mg/Kg	50	10/8/2021 7:30:45 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS31

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:17:00 PM

**Lab ID:** 2109H25-031

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/5/2021 3:21:38 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/5/2021 3:21:38 PM
Surr: DNOP	102	70-130		%Rec	1	10/5/2021 3:21:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/5/2021 9:26:00 PM
Surr: BFB	100	70-130		%Rec	1	10/5/2021 9:26:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 9:26:00 PM
Toluene	ND	0.049		mg/Kg	1	10/5/2021 9:26:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/5/2021 9:26:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/5/2021 9:26:00 PM
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	10/5/2021 9:26:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	ND	60		mg/Kg	20	10/7/2021 8:44:40 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS32

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:19:00 PM

**Lab ID:** 2109H25-032

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	240	10		mg/Kg	1	10/5/2021 2:33:53 PM
Motor Oil Range Organics (MRO)	230	50		mg/Kg	1	10/5/2021 2:33:53 PM
Surr: DNOP	109	70-130		%Rec	1	10/5/2021 2:33:53 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	10/5/2021 10:25:00 PM
Surr: BFB	111	70-130		%Rec	5	10/5/2021 10:25:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.12		mg/Kg	5	10/5/2021 10:25:00 PM
Toluene	ND	0.24		mg/Kg	5	10/5/2021 10:25:00 PM
Ethylbenzene	ND	0.24		mg/Kg	5	10/5/2021 10:25:00 PM
Xylenes, Total	ND	0.49		mg/Kg	5	10/5/2021 10:25:00 PM
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	5	10/5/2021 10:25:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>VP</b>
Chloride	1600	60		mg/Kg	20	10/7/2021 8:57:05 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

**Analytical Report**

Lab Order **2109H25**

Date Reported: **10/15/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WSP

**Client Sample ID:** SS33

**Project:** MC COM 160

**Collection Date:** 9/28/2021 3:20:00 PM

**Lab ID:** 2109H25-033

**Matrix:** SOIL

**Received Date:** 9/30/2021 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/5/2021 3:45:33 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/5/2021 3:45:33 PM
Surr: DNOP	104	70-130		%Rec	1	10/5/2021 3:45:33 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/5/2021 10:44:00 PM
Surr: BFB	102	70-130		%Rec	1	10/5/2021 10:44:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	10/5/2021 10:44:00 PM
Toluene	ND	0.048		mg/Kg	1	10/5/2021 10:44:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/5/2021 10:44:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/5/2021 10:44:00 PM
Surr: 4-Bromofluorobenzene	92.1	70-130		%Rec	1	10/5/2021 10:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2500	150		mg/Kg	50	10/8/2021 7:43:10 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix	

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2109H25

15-Oct-21

**Client:** WSP  
**Project:** MC COM 160

Sample ID: <b>MB-63095</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>PBS</b>	Batch ID: <b>63095</b>	RunNo: <b>81853</b>
Prep Date: <b>10/6/2021</b>	Analysis Date: <b>10/6/2021</b>	SeqNo: <b>2895821</b> Units: <b>mg/Kg</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: <b>LCS-63095</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>LCSS</b>	Batch ID: <b>63095</b>	RunNo: <b>81853</b>
Prep Date: <b>10/6/2021</b>	Analysis Date: <b>10/6/2021</b>	SeqNo: <b>2895822</b> Units: <b>mg/Kg</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 94.0 90 110

Sample ID: <b>MB-63116</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>PBS</b>	Batch ID: <b>63116</b>	RunNo: <b>81856</b>
Prep Date: <b>10/7/2021</b>	Analysis Date: <b>10/7/2021</b>	SeqNo: <b>2896811</b> Units: <b>mg/Kg</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: <b>LCS-63116</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>LCSS</b>	Batch ID: <b>63116</b>	RunNo: <b>81856</b>
Prep Date: <b>10/7/2021</b>	Analysis Date: <b>10/7/2021</b>	SeqNo: <b>2896812</b> Units: <b>mg/Kg</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 95.9 90 110

Sample ID: <b>MB-63118</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>PBS</b>	Batch ID: <b>63118</b>	RunNo: <b>81856</b>
Prep Date: <b>10/7/2021</b>	Analysis Date: <b>10/7/2021</b>	SeqNo: <b>2896850</b> Units: <b>mg/Kg</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: <b>LCS-63118</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>LCSS</b>	Batch ID: <b>63118</b>	RunNo: <b>81856</b>
Prep Date: <b>10/7/2021</b>	Analysis Date: <b>10/7/2021</b>	SeqNo: <b>2896851</b> Units: <b>mg/Kg</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 94.2 90 110

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2109H25

15-Oct-21

**Client:** WSP  
**Project:** MC COM 160

Sample ID: <b>MB-63018</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>63018</b>	RunNo: <b>81800</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2896369</b>							Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		118	70	130			

Sample ID: <b>LCS-63018</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>63018</b>	RunNo: <b>81800</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2896370</b>							Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	47	10	50.00	0	94.8	68.9	135			
Surr: DNOP	5.7		5.000		113	70	130			

Sample ID: <b>2109H25-030AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>SS30</b>	Batch ID: <b>63018</b>	RunNo: <b>81800</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2896372</b>							Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	370	9.7	48.31	297.3	147	39.3	155			
Surr: DNOP	6.0		4.831		124	70	130			

Sample ID: <b>2109H25-030AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>SS30</b>	Batch ID: <b>63018</b>	RunNo: <b>81800</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2896373</b>							Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	330	10	49.80	297.3	61.5	39.3	155	11.6	23.4	
Surr: DNOP	6.0		4.980		120	70	130	0	0	

Sample ID: <b>MB-62999</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>62999</b>	RunNo: <b>81862</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/7/2021</b>	SeqNo: <b>2897828</b>							Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		129	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2109H25

15-Oct-21

**Client:** WSP  
**Project:** MC COM 160

Sample ID: <b>LCS-62999</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>62999</b>	RunNo: <b>81862</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/7/2021</b>	SeqNo: <b>2897829</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	68.9	135			
Surr: DNOP	6.7		5.000		134	70	130			S

Sample ID: <b>MB-63004</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>63004</b>	RunNo: <b>81862</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/9/2021</b>	SeqNo: <b>2900962</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		123	70	130			

Sample ID: <b>LCS-63004</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>63004</b>	RunNo: <b>81862</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/9/2021</b>	SeqNo: <b>2900963</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	68.9	135			
Surr: DNOP	6.2		5.000		123	70	130			

Sample ID: <b>2109H25-010AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>SS10</b>	Batch ID: <b>63004</b>	RunNo: <b>81862</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/9/2021</b>	SeqNo: <b>2900965</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	130	9.5	47.48	154.1	-47.9	39.3	155			S
Surr: DNOP	5.2		4.748		109	70	130			

Sample ID: <b>2109H25-010AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>SS10</b>	Batch ID: <b>63004</b>	RunNo: <b>81862</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/9/2021</b>	SeqNo: <b>2900966</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	180	9.5	47.44	154.1	61.0	39.3	155	32.9	23.4	R
Surr: DNOP	5.5		4.744		116	70	130	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2109H25

15-Oct-21

**Client:** WSP  
**Project:** MC COM 160

Sample ID: <b>mb-62983</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>62983</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893759</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		107	70	130			

Sample ID: <b>mb-63008</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893760</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		103	70	130			

Sample ID: <b>lcs-62983</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>62983</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893761</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	116	78.6	131			
Surr: BFB	1200		1000		119	70	130			

Sample ID: <b>lcs-63008</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893762</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	31	5.0	25.00	0	123	78.6	131			
Surr: BFB	1200		1000		115	70	130			

Sample ID: <b>2109H25-010ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>SS10</b>	Batch ID: <b>62983</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893763</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	35	24	23.97	0	146	61.3	114			S
Surr: BFB	5700		4794		119	70	130			

Sample ID: <b>2109H25-030ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>SS30</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893764</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2109H25

15-Oct-21

**Client:** WSP  
**Project:** MC COM 160

Sample ID: <b>2109H25-030ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>SS30</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893764</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	40	24	24.08	0	165	61.3	114			S
Surr: BFB	5600		4817		116	70	130			

Sample ID: <b>2109H25-010amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>SS10</b>	Batch ID: <b>62983</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893765</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	24	23.85	0	132	61.3	114	10.5	20	S
Surr: BFB	5600		4771		117	70	130	0	0	

Sample ID: <b>2109H25-030amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>SS30</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893766</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	41	24	24.04	0	172	61.3	114	3.61	20	S
Surr: BFB	5500		4808		114	70	130	0	0	

Sample ID: <b>lcs-62982</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>62982</b>	RunNo: <b>81821</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2894442</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	78.6	131			
Surr: BFB	1000		1000		104	70	130			

Sample ID: <b>mb-62982</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>62982</b>	RunNo: <b>81821</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2894443</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		96.2	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2109H25

15-Oct-21

**Client:** WSP  
**Project:** MC COM 160

Sample ID: <b>mb-62983</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>62983</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893811</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		92.7	70	130			

Sample ID: <b>mb-63008</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893812</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		92.7	70	130			

Sample ID: <b>Ics-62983</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>62983</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893813</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	104	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.0	70	130			

Sample ID: <b>Ics-63008</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893814</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.1	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.7	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.6	80	120			
Surr: 4-Bromofluorobenzene	0.87		1.000		86.6	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2109H25

15-Oct-21

**Client:** WSP  
**Project:** MC COM 160

Sample ID: <b>2109H25-011ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>SS11</b>	Batch ID: <b>62983</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893822</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.12	0.9625	0	106	80	120			
Toluene	1.0	0.24	0.9625	0	108	80	120			
Ethylbenzene	1.0	0.24	0.9625	0	107	80	120			
Xylenes, Total	3.2	0.48	2.887	0	111	80	120			
Surr: 4-Bromofluorobenzene	4.5		4.812		93.2	70	130			

Sample ID: <b>2109H25-031ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>SS31</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893823</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9533	0	109	80	120			
Toluene	1.0	0.048	0.9533	0	110	80	120			
Ethylbenzene	1.0	0.048	0.9533	0	110	80	120			
Xylenes, Total	3.2	0.095	2.860	0	111	80	120			
Surr: 4-Bromofluorobenzene	0.84		0.9533		88.2	70	130			

Sample ID: <b>2109H25-011amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>SS11</b>	Batch ID: <b>62983</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893827</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.12	0.9355	0	129	80	120	16.3	20	S
Toluene	1.2	0.23	0.9355	0	132	80	120	16.5	20	S
Ethylbenzene	1.2	0.23	0.9355	0	132	80	120	18.3	20	S
Xylenes, Total	4.0	0.47	2.806	0	142	80	120	21.4	20	RS
Surr: 4-Bromofluorobenzene	4.3		4.677		92.0	70	130	0	0	

Sample ID: <b>2109H25-031amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>SS31</b>	Batch ID: <b>63008</b>	RunNo: <b>81809</b>								
Prep Date: <b>10/4/2021</b>	Analysis Date: <b>10/5/2021</b>	SeqNo: <b>2893830</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9671	0	108	80	120	1.03	20	
Toluene	1.0	0.048	0.9671	0	107	80	120	0.972	20	
Ethylbenzene	1.0	0.048	0.9671	0	106	80	120	2.29	20	
Xylenes, Total	3.0	0.097	2.901	0	105	80	120	4.19	20	
Surr: 4-Bromofluorobenzene	0.84		0.9671		86.9	70	130	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2109H25  
15-Oct-21

**Client:** WSP  
**Project:** MC COM 160

Sample ID: <b>LCS-62982</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>62982</b>		RunNo: <b>81821</b>							
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>		SeqNo: <b>2894544</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.8	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	99.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	98.3	80	120			
Surr: 4-Bromofluorobenzene	0.87		1.000		86.6	70	130			

Sample ID: <b>mb-62982</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>62982</b>		RunNo: <b>81821</b>							
Prep Date: <b>10/1/2021</b>	Analysis Date: <b>10/5/2021</b>		SeqNo: <b>2894545</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.86		1.000		86.2	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: WSP Work Order Number: 2109H25 RcptNo: 1

Received By: Cheyenne Cason 9/30/2021 7:30:00 AM

Completed By: Isaiah Ortiz 9/30/2021 9:01:09 AM

Reviewed By: KPG 10/01/21
KPG 10/01/21

Handwritten initials: Cason, I-Ortiz

Chain of Custody

- 1. Is Chain of Custody complete? Yes [checked] No [ ] Not Present [ ]
2. How was the sample delivered? Courier

Log In

- 3. Was an attempt made to cool the samples? Yes [checked] No [ ] NA [ ]
4. Were all samples received at a temperature of >0° C to 6.0°C Yes [checked] No [ ] NA [ ]
5. Sample(s) in proper container(s)? Yes [checked] No [ ]
6. Sufficient sample volume for indicated test(s)? Yes [checked] No [ ]
7. Are samples (except VOA and ONG) properly preserved? Yes [checked] No [ ]
8. Was preservative added to bottles? Yes [ ] No [checked] NA [ ]
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes [ ] No [ ] NA [checked]
10. Were any sample containers received broken? Yes [ ] No [checked]
11. Does paperwork match bottle labels? Yes [checked] No [ ]
12. Are matrices correctly identified on Chain of Custody? Yes [checked] No [ ]
13. Is it clear what analyses were requested? Yes [checked] No [ ]
14. Were all holding times able to be met? Yes [checked] No [ ]

# of preserved bottles checked for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by: JA 10-1-21

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [checked]

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_
By Whom: \_\_\_\_\_ Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person
Regarding: \_\_\_\_\_
Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Rows 1-3.



Page 2 of 3

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

**Chain-of-Custody Record**

Turn-Around Time:  Standard  Rush

Project Name: MC COM #160

Project #: \_\_\_\_\_

Project Manager: \_\_\_\_\_

Sampler: \_\_\_\_\_

On Ice:  Yes  No

# of Coolers: 3

Cooler Temp (including CF): See first page (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
9-28-21	1445	soil	SS13	(1) 402	cool	2109425
	1447		SS14			013
	1449		SS15			014
	1450		SS16			015
	1452		SS17			016
	1453		SS18			017
	1456		SS19			018
	1457		SS20			019
	1459		SS21			020
	1500		SS22			021
	1502		SS23			022
	1504		SS24			023
						024

Relinquished by: [Signature] Date: 9/29/21 Time: 1203

Relinquished by: [Signature] Date: 9/29/21 Time: 1824

Received by: [Signature] Date: 9/29/21 Time: 1203

Received by: [Signature] Date: 9/30/21 Time: 0710

**Analysis Request**

BTEX / MTBE / TMS (801)	
TPH:8015D(GRO / DRO / MRO)	
8081 Pesticides/8082 PCB's	
EDB (Method 504.1)	
PAHs by 8310 or 8270SIMS	
RCRA 8 Metals	
Cl <sup>-</sup> , Br <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , PO <sub>4</sub> <sup>-</sup> , SO <sub>4</sub> <sup>-</sup>	
8260 (VOA)	
8270 (Semi-VOA)	
Total Coliform (Present/Absent)	

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



ENCLOSURE B – PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG		
<b>WHIPTAIL MIDSTREAM LLC</b>	<b>MC COM #160 RIO ARRIBA COUNTY, NEW MEXICO</b>	<b>31403189.002</b>

Photo No.	Date	
1	9/28/2021	
View of excavated area where release breached containment. Area where SS33 was collected (looking west)		

Photo No.	Date	
2	9/28/2021	
View of the center of the release/excavation area within the containment, showing various soil sample locations (looking south).		



PHOTOGRAPHIC LOG		
<b>WHIPTAIL MIDSTREAM LLC</b>	<b>MC COM #160 RIO ARRIBA COUNTY, NEW MEXICO</b>	<b>31403189.002</b>

Photo No.	Date	
3	9/28/2021	
View of the eastern side of the release/excavation area within the containment, showing various soil sample locations (looking east).		

Photo No.	Date	
4	9/28/2021	
View of the western side of the release/excavation area within the containment, showing various soil sample locations (looking southwest).		

## OCD Permitting

Home Operator Data Action Status Action Search Results Action Status Item Details

### [C-141] Release Corrective Action (C-141) Application

#### Submission Information

Submission ID:	48186	Districts:	Aztec
Operator:	<a href="#">[373240]</a> Whiptail Midstream LLC	Counties:	Rio Arriba
Description:	Whiptail Midstream LLC [373240] MC COM #160 nAPP2125652492 (Discovery: 09/10/2021, Active, , Federal)		
Status:	APPROVED		
Status Date:	09/13/2021		
References (1):	nAPP2125652492		

#### Forms

Attachments: [C-141](#)

#### Questions

This submission type does not have questions, at this time.

#### Acknowledgments

This submission type does not have acknowledgments, at this time.

#### Comments

No comments found for this submission.

#### Conditions

Summary: *marcus (9/13/2021)*, When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141

#### Reasons



No reasons found for this submission.

### Fees

Summary:		Created	Type	Amount	Status	Saved	
	DOYWJ-210913-C-1410	Fee	9/13/2021	SB553 A.(2) [ADMIN]	\$150.00	Paid [PAID]	9/13/2021
		Payment	9/13/2021	Credit Card [CC]	\$150.00	Paid [PAID]	9/13/2021

[Go Back](#)

New Mexico Energy, Minerals and Natural Resources Department | Copyright 2012  
1220 South St. Francis Drive | Santa Fe, NM 87505 | P: (505) 476-3200 | F: (505) 476-3220

[EMNRD Home](#)   [OCD Main Page](#)   [OCD Rules](#)   [Help](#)

## OCD Permitting

Home Operator Data Action Status Action Search Results Action Status Item Details

### [NOTIFY] Notification Of Release (NOR) Application

#### Submission Information

Submission ID:	48187	Districts:	Aztec
Operator:	<a href="#">[373240]</a> Whiptail Midstream LLC	Counties:	Rio Arriba
Description:	Whiptail Midstream LLC [373240] MC COM #160 nAPP2125652492 {Discovery: 09/10/2021, Active, , Federal}		
Status:	APPROVED		
Status Date:	09/13/2021		
References (1):	nAPP2125652492		

#### Forms

This application type does not have attachments.

#### Questions

##### Location of Release Source

Please answer all the questions in this group.

Site Name	MC COM #160
Date Release Discovered	09/10/2021
Surface Owner	Federal

##### Incident Details

Please answer all the questions in this group.

Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

##### Nature and Volume of Release

Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.

Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Corrosion   <b>Other</b> ( <b>Specify</b> )   Produced Water   Released: 210 BBL ( <b>Unknown</b> Released Amount)   Reco BBL   Lost: 0 BBL.
Is the concentration of dissolved chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there <b>additional details</b> for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

**Nature and Volume of Release (continued)**

Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by 19.15.29.7(A) NMAC	Yes, major release.
Reasons why this would be considered a submission for a notification of a major release	<ul style="list-style-type: none"> <li>Unauthorized release of a volume, excluding gases, of 25 barrels or more</li> </ul>
If YES, was immediate notice given to the OCD, by whom	Not answered.
If YES, was immediate notice given to the OCD, to whom	Not answered.
If YES, was immediate notice given to the OCD, when	Not answered.
If YES, was immediate notice given to the OCD, by what means (phone, email, etc.)	Not answered.

*With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.*

**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	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

*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 prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial action has been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.*

**Acknowledgments**

- I acknowledge that I am authorized to submit notification of a releases on behalf of my operator.
- I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to my operator) to track the notification(s) and corrective action(s) for a release, pursuant to NMAC 19.15.29.
- I acknowledge that creating a new incident file will require my operator to file subsequent submission(s) of form "C-141, Application for administrative approval of a release notification and corrective action", pursuant to NMAC 19.15.29.
- 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.
- I acknowledge the fact that 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.
- I acknowledge the fact that, 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.

**Comments**

No comments found for this submission.

### Conditions

**Summary:** *ejohnson (9/13/2021)*, When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.

### Reasons

No reasons found for this submission.

### Fees

No fees found for this submission.

[Go Back](#)

New Mexico Energy, Minerals and Natural Resources Department | Copyright 2012  
1220 South St. Francis Drive | Santa Fe, NM 87505 | P: (505) 476-3200 | F: (505) 476-3220

[EMNRD Home](#)   [OCD Main Page](#)   [OCD Rules](#)   [Help](#)

**From:** OCDOnline@state.nm.us  
**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 48187  
**Date:** September 13, 2021 at 2:35 PM  
**To:** Ernie Johnson ernie.johnson@whiptailmidstream.com



To whom it may concern (c/o Ernest Johnson for Whiptail Midstream LLC),

The OCD has accepted the submitted *Notification of a release* (NOR), for incident ID (n#) nAPP2125652492, with the following conditions:

- **When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.**

Please reference nAPP2125652492, on all subsequent C-141 submissions and communications regarding the remediation of this release.

**NOTE:** As of December 2019, NMOCD has discontinued the use of the "RP" number.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

ocd.enviro@state.nm.us

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

EXHIBIT

3

**From:** OCDOnline@state.nm.us  
**Subject:** The Oil Conservation Division (OCD) has approved the application, Application ID: 48186  
**Date:** September 13, 2021 at 4:51 PM  
**To:** Ernie Johnson ernie.johnson@whiptailmidstream.com



To whom it may concern (c/o Ernest Johnson for Whiptail Midstream LLC),

The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action (C-141)*, for incident ID (n#) nAPP2125652492, with the following conditions:

- **When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the Initial C-141**

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,  
Ramona Marcus  
Compliance Officer Advanced  
505-470-3044  
Ramona.Marcus@state.nm.us

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

2

**From:** OCDOnline@state.nm.us  
**Subject:** The Oil Conservation Division (OCD) is rereviewing the application, Application ID: 61609.  
**Date:** February 25, 2022 at 10:54 AM  
**To:** Ernie Johnson ernie.johnson@whiptailmidstream.com



To whom it may concern (c/o Ernest Johnson for Whiptail Midstream LLC),

The OCD has determined that the rejected submission *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2125652492, should be returned to "Under OCD Review" status.

Sorry for any inconvenience.  
You will receive another email when this re-evaluation is complete.

Thank you,  
Cory Smith  
505-334-6178  
cory.smith@state.nm.us

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

3

**From:** OCDOnline@state.nm.us  
**Subject:** The Oil Conservation Division (OCD) has rejected the application, Application ID: 61609  
**Date:** March 23, 2022 at 10:36 AM  
**To:** Ernie Johnson ernie.johnson@whiptailmidstream.com



To whom it may concern (c/o Ernest Johnson for Whiptail Midstream LLC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action (C-141)*, for incident ID (n#) nAPP2125652492, for the following reasons:

- **1. Sample depths not recorded 2. Chlorides &/or Total Petroleum Hydrocarbons not fully delineated based on closure standards established for 0 to 4 feet below grade - 19.15.29.12C (2), then to 19.15.13.D (1). For further explanation, see document within OCD's web site referred to as "Procedures for Implementation of the Spill Rule: September 6, 2019"**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 61609.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,  
Nelson Velez  
Environmental Specialist - Advanced  
505-469-6146  
Nelson.Velez@state.nm.us

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

4

**From:** OCDOnline@state.nm.us  
**Subject:** The Oil Conservation Division (OCD) is rereviewing the application, Application ID: 61609.  
**Date:** March 23, 2022 at 1:50 PM  
**To:** Ernie Johnson ernie.johnson@whiptailmidstream.com



To whom it may concern (c/o Ernest Johnson for Whiptail Midstream LLC),

The OCD has determined that the rejected submission *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2125652492, should be returned to "Under OCD Review" status.

Sorry for any inconvenience.  
You will receive another email when this re-evaluation is complete.

Thank you,  
Cory Smith  
505-334-6178  
cory.smith@state.nm.us

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

5

**From:** OCDOnline@state.nm.us  
**Subject:** The Oil Conservation Division (OCD) has rejected the application, Application ID: 61609  
**Date:** March 23, 2022 at 2:53 PM  
**To:** Ernie Johnson ernie.johnson@whiptailmidstream.com



To whom it may concern (c/o Ernest Johnson for Whiptail Midstream LLC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action (C-141)*, for incident ID (n#) nAPP2125652492, for the following reasons:

- **Closure request denied based on bullets 1 & 2. 1. Sample depths not recorded 2. Chlorides &/or Total Petroleum Hydrocarbons not fully delineated based on closure standards established for 0 to 4 feet below grade - 19.15.29.12C (2), then to 19.15.13.D (1). See document within OCD's web site referred to as "Procedures for Implementation of the Spill Rule: September 6, 2019". 3. Responsible party must re-submit closure report by May 25, 2022 (approximately 60 days from this notification).**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 61609.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,  
Nelson Velez  
Environmental Specialist - Advanced  
505-469-6146  
Nelson.Velez@state.nm.us

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

6

## OCD Permitting

Home Searches Incidents Incident Details

### NAPP2125652492 MC COM #160 @ I-35-24N-07W 1734N 225E

#### General Incident Information

Site Name: MC COM #160  
 Well:  
 Facility:  
 Operator: [\[373240\]](#) Whiptail Midstream LLC  
 Status: Closure Not Approved  
 Type: Produced Water Release  
 District: Aztec  
 Severity: Major  
 Surface Owner: Federal  
 County: Rio Arriba (39)  
 Incident Location: I-35-24N-07W 1734 FNL 225 FEL  
 Lat/Long: 36.265271,-107.537467 NAD83  
 Directions:

#### Quick Links

- [General Incid](#)
- [Materials](#)
- [Events](#)
- [Orders](#)

#### Associated

- [Incident Files](#)

#### New Search

- [New Facility](#)
- [New Incident](#)
- [New Operato](#)
- [New Pit Sear](#)
- [New Spill Se](#)
- [New Tank Se](#)
- [New Well Se](#)

#### Notes

Source of Referral: Industry Rep  
 Action / Escalation: Referred to Environmental Inspector  
 Resulted In Fire:   
 Will or Has Reached Watercourse:   
 Endangered Public Health:   
 Property Or Environmental Damage:   
 Fresh Water Contamination:

#### Contact Details

Contact Name: Ernest Johnson  
 Contact Title:

#### Event Dates

Date of Discovery: 09/10/2021  
 OCD Notified of Release: 09/10/2021  
 Extension Date: 03/23/2022  
 Cancelled Date:  
 Initial C-141 Received: 09/13/2021  
 Characterization Report Approved:  
 Characterization Report Received:  
 Remediation Plan Approved:  
 Remediation Plan Received:  
 Remediation Due: 05/25/2022  
 Closure Report Received:  
 Closure Report Approved:

#### Compositional Analysis of Vented and/or Flared Natural Gas

No Compositional Analysis Found

#### Incidents Materials

Cause	Source	Material	Volume			
			Unk.	Released	Recovered	Lost



Corrosion	Other (Specify)	Produced Water	<input checked="" type="checkbox"/>	210	210	0	BBL
-----------	-----------------	----------------	-------------------------------------	-----	-----	---	-----

**Incident Events**

Date	Detail
03/23/2022	The (03/23/2022, C-141) application <a href="#">61609</a> was rejected by OCD. The operator was emailed with details of this event.
03/23/2022	Closure request denied based on bullets 1 & 2. 1. Sample depths not recorded 2. Chlorides &/or Total Petroleum Hydrocarbons not fully delineated based on closure standards established for 0 to 4 feet below grade - 19.15.29.12C (2), then to 19.15.13.D (1). See document within OCD's web site referred to as "Procedures for implementation of the Spill Rule: September 6, 2019". 3. Responsible party must re-submit closure report by May 25, 2022 (approximately 60 days from this notification).
03/23/2022	The (03/23/2022, C-141) application <a href="#">61609</a> was returned to under OCD review.
03/23/2022	The (03/23/2022, C-141) application <a href="#">61609</a> was rejected by OCD. The operator was emailed with details of this event.
02/25/2022	The (03/23/2022, C-141) application <a href="#">61609</a> was returned to under OCD review.
02/24/2022	Closure report not approved. Explanation as follows: 1. Chloride >600 mg/Kg in soils 0'-4' below ground surface (b.g.s.) in 24 of 33 samples - 19.15.29.12C(2) & 19.15.29.13D(1) NMAC 2. Chlorides not fully delineated for the impacted area identified. 3. Depths b.g.s. per sample not recorded.
02/24/2022	The (03/23/2022, C-141) application <a href="#">61609</a> was rejected by OCD. The operator was emailed with details of this event.
11/12/2021	The (03/23/2022, C-141) application <a href="#">61609</a> was assigned to this incident.
09/13/2021	The (09/13/2021, C-141) application <a href="#">48186</a> was accepted by OCD. The operator was emailed with details of this event.
09/13/2021	An application <a href="#">48186</a> was submitted to OCD for review. It was submitted, indicating that it was an: [C-141] Application for administrative approval of a release notification and corrective action The operator was emailed confirmation of this event.
09/13/2021	The (09/13/2021, C-141) application <a href="#">48186</a> was assigned to this incident.
09/13/2021	The (09/13/2021, NOR) application <a href="#">48187</a> was assigned to this incident.
09/13/2021	Initial Response question & answers at the time of notification were as follows. <ul style="list-style-type: none"> <li>• The source of the release has been stopped: True.</li> <li>• The impacted area has been secured to protect human health and the environment: True.</li> <li>• Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices: True.</li> <li>• All free liquids and recoverable materials have been removed and managed appropriately: True.</li> </ul>
09/13/2021	New incident created by the operator, upon the submission of notification of release.
09/10/2021	C-141 received on 9/13/2021 for release on 9/10/2021. The cause of the release was reported as "Whiptail discovered a release on September 10, 2021, at the MC COM #160 located in section 7, T24N, R7W in Rio Arriba County. The volume of crude oil released is estimated at 210+ bbls at this time, of which some bbls were released outside of containment. The release was caused by a failure in the threads of a 2 inch to 1 inch reducer fitting on the above ground line downstream of the produced water discharge pump. The discharge line where the fitting failed filled the containment with produced water mixed with some oil and the liner is believed to be compromised. Whiptail removed 210 bbls of standing liquids via vac truck and are pulling back the liner to investigate potential impact to soil. A third party contractor has been retained to oversee remediation of the release."
09/10/2021	Release discovered by the operator.

**Orders**

No Orders Found
-----------------

New Mexico Energy, Minerals and Natural Resources Department | Copyright 2012  
1220 South St. Francis Drive | Santa Fe, NM 87505 | P: (505) 476-3200 | F: (505) 476-3220

[EMNRD Home](#)   [OCD Main Page](#)   [OCD Rules](#)   [Help](#)

**WPX SJB Gathering's Chaco 2407-35I Nos. 159H & 160H Well-Connect  
Pipeline (NMNM134452)/ Water System (NMNM134453)  
Plan of Development (POD)**

**A. PLAN OF DEVELOPMENT**

**1. Purpose and Need**

- a. Purpose and need for the pipeline:
- b. The purpose of the proposed NMNM134452 well connect pipeline system & NMNM134453 waterline is to provide WPX access to public lands managed by BLM to build a pipeline and related facilities to access WPX Oil & Gas Minerals. The need for the proposed project is established by the BLM's responsibility under the Federal Land Policy and Management Act of 1976 to respond to a request for ROW grants over public lands.
- c. What will be constructed?  
The proposed pipeline system will consist of two trenches. Trench 1 will have an 8-inch steel gas/liquids line and a 4-inch poly gas/liquids line. Trench 2 will have a 6-inch steel gas/liquids line and a 4-inch poly gas/liquids line. In addition, a 4-inch poly or steel water pipeline will be placed in either Trench 1 or 2. The trenches, which will be offset from one another by 5 feet, will both be located within the 40-foot-wide pipeline corridor ROW that is approximately 6,404.1 feet in length. Two SF299 applications have been submitted in regards to these authorizations, NMNM134452 is in regards to oil and gas and another SF299, NMNM134453, in regards to water.
- d. Commodity to be transported and for what purpose:  
Natural gas, water, and hydrocarbon liquids will be transported for the operation of WPX Energy's mineral lease.
- e. Is the pipeline for a gathering system, trunk line, or distribution line?  
This pipeline will be part of WPX SJB Gathering's gathering system.
- f. Will it be surface or subsurface?  
This pipeline system will be subsurface.
- g. Length and width of the right-of-way and the area needed for related facilities:  
The pipeline will total approximately 6,383.8 feet on BLM lands and will be constructed within a 40-foot wide ROW.
- h. Is this ancillary to an existing right-of-way?  
The pipeline corridor parallels or overlaps the below listed existing disturbance areas:
  1. Chaco 2407-35I Nos. 159H & 160H Well Pad
  2. Existing Beeline pipeline corridor
  3. Existing BLM resource road
- i. List alternative routes or locations:  
No reasonable alternatives to the proposed action have been developed that would result in significantly fewer impacts or any clear advantages over the proposed action. The proposed pipeline corridor follows the most economic and direct route based on the location of existing WPX and WPX-SJB infrastructure, existing disturbance, and surface resources.
- j. Estimated start date and duration of pipeline construction activities:  
WPX-SJB plans to start construction immediately upon issuance of ROW grants and expects construction to last 4-6 weeks.

**2. Right-of-way Location**

- a. Legal description:  
Please see attached map labeled attachment #1  
Section 34 & 35 in Township 24 North, Range 7 West and Section 3 in Township 23 North, Range 7 West.  
Driving Directions:  
To access the project area, from the intersection of U. S. Highway 550 and U. S. Highway 64 in Bloomfield, New Mexico travel southerly on U.S. Highway 550 for 48.3 miles to Mile Marker (MM) 102.9. Turns left off highway and continue for 1.0 mile to fork in roadway, turn left at fork and continue for 0.4 miles down Rocky Berry hill to fork in roadway at the bottom of the hill. Turn left (Westerly) for 0.7 miles to 4-way intersection, continue straight (North-westerly) for 0.1 miles to 4-way intersection. Go straight for 0.2 miles to fork in roadway. Turn right (Easterly) for 1.0 mile to 4-way intersection on the edge of an existing well pad. Go straight for 0.1 miles through an existing well pad to proposed Chaco 2407-35I Nos. 159H & 160H Well Pad.
- b. Centerline survey for complete project:  
Please see attached map labeled attachment #1
- c. Additional site specific engineering surveys for critical areas:  
There are no critical areas requiring engineered drawings for this authorization.
- d. Maps and drawings showing river crossings:  
There were no water drainage or erosion issues observed with the site.
- e. Acre calculation of the right-of-way by land status and ownership:  
BLM public lands, 5.88 acres of ROW.

**EXHIBIT**

**5**

## 3. Government Agencies Involved

- a. FERC, USFWS, BIA, USFS:  
No involvement necessary for this authorization
- b. Copy of FERC Sec. 7c Application, if applicable:  
This is not a FERC regulated pipeline.
- c. State and local agencies that may be involved:  
No involvement necessary for this authorization

## 4. Facility Design Factors

- a. Pipeline pressure standards:
  - 1) pipe wall thickness:           Steel 4" nominal=0.188 in wt  
Steel 6" nominal=0.188 in wt  
Poly 4" nominal=1.21 in wt
  - 2) pounds per square inch (psi) rating:           Steel 4" & Steel 6"=1440 psi  
Poly 4"= 1500psi
- b. Type and toxicity of pipeline product:  
Natural gas- non toxic  
Water- non toxic  
Hydrocarbon liquids- non toxic
- c. Anticipated operating temperatures:  
Steel 4" & Steel 6"= 50 to 120 degrees F   Poly 4"= 180 degrees F
- d. Depth of the pipeline:
  - 1) road depth: minimum of 6 feet
  - 2) drainage depth: minimum of 6 feet
  - 3) normal depth: 4 feet
- e. Permanent width or size:  
40 foot permanent ROW width
- f. Location, purpose, dimensions, and acreage of any temporary use areas:  
Vehicle, material and equipment staging and storage will be kept within the ROW.
- g. required or proposed upgrades to existing access roads  
No upgrades will be made to existing access roads as they will be used in "as is" condition and be brought up to FFO standards if necessary at end of the use.

## 5. Additional Components of the Right-of-Way

- a. Facilities at each end of the pipeline:
  - WPX SJB Gathering Chaco Trunk 4 Extension 3 Pipeline and Waterline (NMNM134452 & NMNM134453)
  - Chaco 2407-35I Nos. 159H & 160H Well Pad
  - Meter runs
  - Pig Launchers
  - Cross over valve assemblies
- b. Connection to an existing right-of-way:
  - 1) Existing components on or off public land  
No existing components on or off public land
  - 2) Possible future components  
Meter run  
Pig launcher  
Cross over valve assembly
- c. Within a pipeline corridor:
  - 1) other pipelines within the corridor- parallels Beeline Pipeline and Enterprise Pipeline
  - 2) off-set requirements- 15 feet
- d. Location of pumping and/or compressor stations:  
Chaco 2407-35I Nos. 159H & 160H Well Pad, Section 35, T24N, R7W, N.M.P.M.
- e. Need for sand and gravel and where will it be obtained:  
If a need for sand and gravel arises then it will be obtained at any available source on FFO BLM Public Lands within close proximity to project area coordination for source will take place with the FFO BLM roads specialist.
- f. Communication facilities needed to operate the facility:  
No communication facilities are necessary for this authorization
- g. Location of staging or equipment storage, and include areas that may need remediation:  
Vehicle, material, and equipment staging and storage will be kept within the ROW.

## 6. Construction of the Facilities

### a. Construction description:

#### 1) major facilities-

No major facilities to be constructed

#### 2) ancillary facilities-

- Chaco 2407-35I Nos. 159H & 160H Well Pad
- WPX SJB Gathering Chaco Trunk 4 Extension 3 Pipeline
- Meter runs
- Pig Launchers
- Cross over valve assemblies
- Cathodic Protection - Cathodic protection is an integral part of maintaining the integrity of pipelines, wellbores, and other sub-grade metallic structures. It is accomplished through the use of sacrificial anode beds. Anode beds consist of a sacrificial metal (anode), a rectifier, and cabling. The sacrificial metal is a more easily corroded metal. The purpose of the sacrificial anode beds is to provide the necessary material for the anodic process of cathodic protection. The rectifier and cabling provide the electrical current required to effectively protect the sub-grade structure (cathode).

### b. Work force:

Approximately 5-10 pipeline construction personnel will be onsite during construction. Approximately 5-10 standard size oilfield pickups will be used to transport construction personnel and 5 transport truck loads to deliver equipment to location. Workers will be on-site 10 hours a day, 7 days a week, for the duration of construction. The majority of the workers will commute to the construction ROW early in the morning (between 6:00 a.m. and 7:00 a.m.) and will return in the evening during non-peak traffic hours (between 5:30 p.m. and 6:30 p.m.). Heavy equipment will be transported to the site and left on the ROW until construction is complete.

### c. Flagging or staking the right-of-way:

ROW will be staked to ensure all activity is confined to authorized area. The centerline of the pipeline will be staked at 100 to 200 foot intervals to delineate the limits of the pipeline construction corridor and TUA's. All staking will be maintained for the duration of the pipeline construction.

### d. Clearing and grading:

Within the approved pipeline corridor all vegetation will be cleared, the top 6 inches of topsoil (if available) will be salvaged and stockpiled. Vegetation removed during construction, including trees that measure less than 3 inches in diameter (at ground level) and slash/brush will be chipped or mulched and incorporated into top soil as additional organic matter. Trees 3 inches in diameter or greater will be cut to ground level and delimbed. Tree trunks and cut limbs will be stacked within the permitted project area for public access. The subsurface portion of trees (tree stumps) will be hauled to an approved disposal facility.

### e. Description of construction process and facilities:

Construction methods will be in compliance with FFO BLM Gold Book Standards. After completion of clearing and grading activities trenching activities will be conducted using a trencher or track hoe. The pipeline trench will be a minimum of 4 feet in depth. Under watercourses, the trenches will be deep enough to allow for 6 feet of soil cover between the pipes and the wash. The trenches will be a minimum of 16 inches in width. Soft plugs will be placed every quarter of a mile within the trench. No more than half a mile of open trench or the amount of trench that can be worked in a day will be opened at a time unless a night watchman is utilized for open trench monitoring. Backfilling operations will be performed within a reasonable amount of time to ensure that the trench is not left open for more than 24 hours. If a trench is left open overnight, it will be fenced with a temporary fence or a night watchman will be utilized. After trenching and pipe placement in the trenches, the soils excavated from the trenches will be returned and compacted to prevent subsidence. The trenches will be compacted after approximately two feet of fill is placed within the trenches and after the ground surface has been leveled. After the pipe has been welded and coated a side-boom tractor will be used to place the pipe into the trench. After trenching and pipe placement in the trenches, the soils excavated from the trenches will be returned and compacted to prevent subsidence. The trenches will be compacted after approximately two feet of fill is placed within the trenches and after the ground surface has been leveled.

### f. Cathodic Protection Installation:

To install an anode bed a vertical bore is drilled and casing of the specified size and amount is set. Casing is a minimum of 20 feet in length. Upon encountering ground water, drilling shall cease and depth to ground water (DTGW) recorded using a conductive tape technique (Wellsounder) before commencing to the desired bore depth. This information is recorded on the supplied groundwater depth log form. The bore will be completed to a desired vertical bore depth of approximately 300 feet. Given a 240 foot anode length and varying lengths of surface casing, the overall bore shall be allowed to vary by no more than  $\pm 60$  feet from the standard 300 feet. Once the bore is completed and cased, the anode is installed in accordance with the manufacturer's specifications. The bore is then backfilled with Conducrete using a tremie tube technique starting from TD of the bore. The casing will be cut and capped 12 inches below the surface. The

specified flush grade valve is then installed directly over the bed. The bed location (Lat/Long) is recorded and full drill log report is completed and filed with WPX. The bed will not be energized for a minimum of 45 days.

- g. Access to, and along, right-of-way during construction:  
Access to and along ROW will be utilizing existing roadways, two-tracks and approved ROW
- h. Traffic control:  
Traffic Control signage will be utilized within construction areas when needed. No thru traffic is anticipated to be impacted for the construction of this pipeline.
- i. Engineering drawings and specifications for site-specific problems relating to surface use or special mitigation:  
No site specific problems have been identified for this authorization.
- j. Diagrams, drawings, and cross sections to help visualize the scope of the project:  
Please see attached pipeline centerline drawing labeled attachment #1
- k. Special equipment that will be utilized:  
None
- l. Contingency planning:
  - 1. Holder contacts  
WPX Energy  
Andrea Felix- Regulatory Specialist  
505-333-1849
  - 2. BLM contacts  
Realty Specialist  
Scott Hall  
505-564-7721
- m. Safety requirements:  
Signage for traffic control will be utilized if needed. The NM One Call Notification System will be utilized prior to commencement of construction. WPX Energy and their contractors will follow Company Best Management Practices and Policies.
- n. Industrial wastes and toxic substances:  
No wastes will be stored and no toxic substances to be generated on ROW.
- o. Post-construction requirements and activities:  
Post-Construction requirements and activities will be followed as stipulated in the ROW grant.

#### 7. Resource Values and Environmental Concerns

- a. Address at level commensurate with anticipated impacts and location with regard to existing corridors:  
The anticipated impacts are minimal and temporary in nature during construction as all disturbances will parallel the proposed access and all pipeline disturbances will be reclaimed.
- b. Potential issues and/or conflicts regarding livestock grazing, public health and safety, and resources:  
air, noise, geologic hazards, mineral and energy resources, paleontological resources, cultural resources, soils, water, vegetation, forest resources, wildlife, migratory birds, threatened and endangered species, visual resources, noxious weeds, livestock grazing, BLM projects, recreation activities, wilderness, etc.  
The above underlined resources have the potential to be impacted by this project.
- c. Project design features to mitigate the above issues and/or conflicts:  
The following design features and best management practices in addition to the stipulations in the ROW grant and FFO BLM Gold Book Standards will be followed to mitigate the above identified issues and/or conflicts. For additional detailed information on the below listed design features and best management practices please refer to WPX Energy Production, LLC's Proposed Chaco 2407-35I Nos. 159H & 160H Oil and Natural Gas Wells Project Environmental Assessment
 

1. Control of Waste	5. Protection of Flora and Fauna, including SSS and Livestock
2. Protection of Cultural Resources	6. Protection of the Public
3. Protection of Top Soil	7. Protection of Air Resources
4. Prevention and Control of Weeds	8. Protection of Water Resources

#### 8. Operation and Maintenance

- a. Will new or expanded access be needed for operation and maintenance?  
No new or expanded access will be needed for the operation or maintenance of this pipeline system once placed into service. If an event occurs that expanded access is needed a request to additional TUA will be submitted on an SF 299 to FFO BLM.
- b. Will there be hydrostatic testing and subsequent release of water and what is the anticipated volume?  
Yes, hydrostatic testing will occur on the new pipeline system. No, there will not be subsequent release of water, as we will haul the water used for hydrostatic testing to our nearest drilling rig for re use.
- c. Will removal and/or addition of pipe and/or pumps be required as part of pipeline maintenance?

- No, there will be no removal installation of pipe or pumps as part of pipeline maintenance.
- d. Will all maintenance activities be confined within the right-of-way?  
Yes, all maintenance activities will be confined within existing ROW.
- e. Safety:  
All above ground equipment not subject to safety requirements will be painted the color stipulated in the ROW grant. A reflective material may be used to reduce hazards that may occur when structures are near a roadway.
- f. Will industrial wastes and toxic substances be generated or stored on right-of-way?  
No industrial wastes or toxic substances will be generated or stored on ROW.
- g. Inspection and maintenance schedules:
  - 1) will these be conducted on-the-ground and/or by aircraft: pipeline inspections will be conducted on the ground
  - 2) if by aircraft, will the aircraft require landing strips and/or heliports- Not by aircraft
- h. Work schedules:  
Monday thru Sunday
- i. Fire control:  
In case of a fire emergency fire extinguishers are available in company vehicles.
- j. Contingency planning:
  - 1. Holder contacts  
WPX Energy  
Andrea Felix- Regulatory Specialist  
505-333-1849
  - 2. BLM contacts  
Realty Specialist  
Scott Hall  
505-564-7721

**B. RECLAMATION PLAN-** Please see attached labeled as attachment # 2

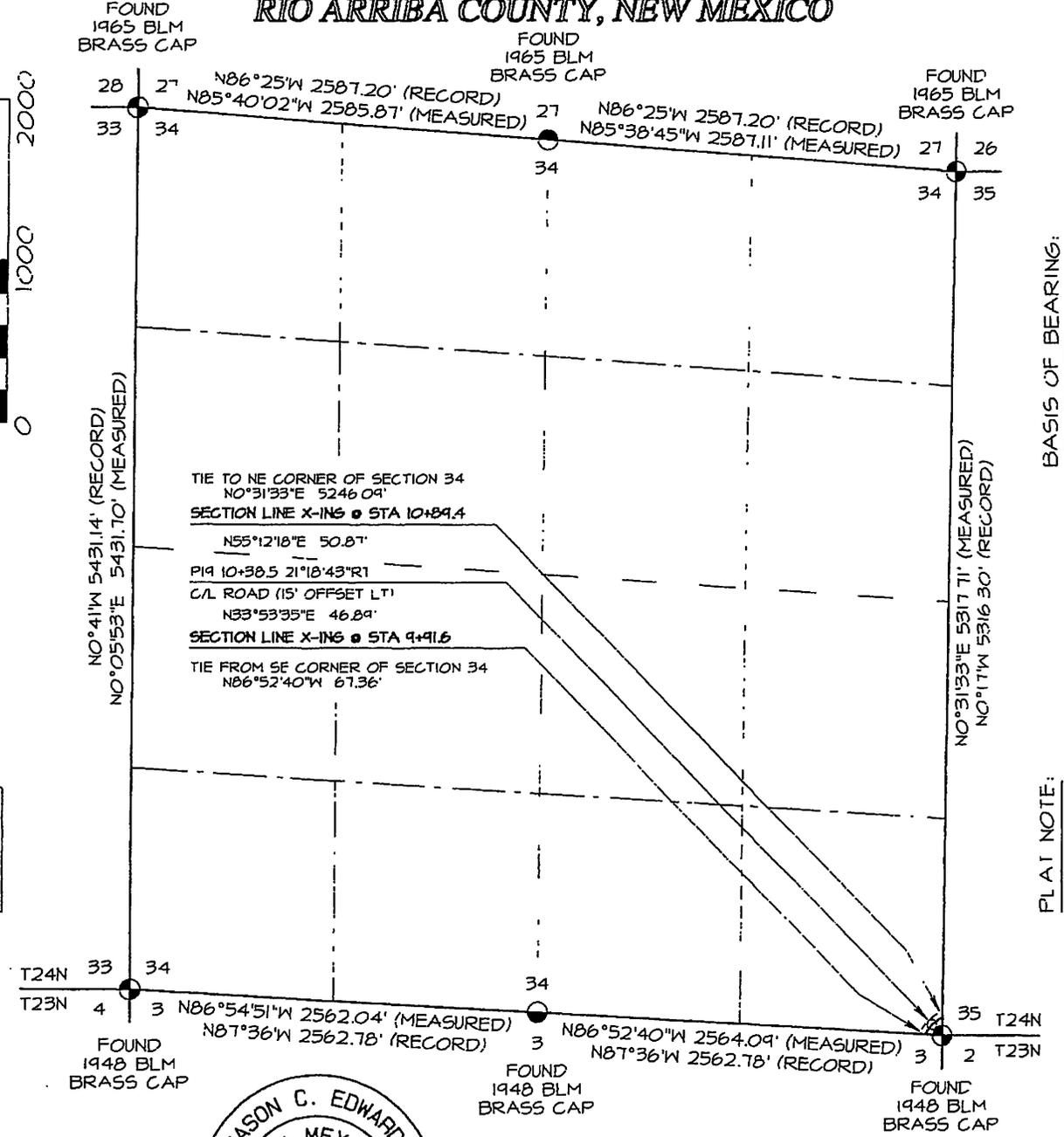
1. Cathodic Protection

- a. P/A Process - The decommissioning of the anode bed will be completed in accordance with all State, Federal and local regulatory requirements. The first step is to de-energize and lock out/tag out (LO/TO) the power source to the anode bed prior to disassembling the junction box. The junction box is then disassembled and any casing vaults and/or pads that may be present are removed. Personnel will mill and circulate as much backfill, cable, and residual anode material within the casing as practicable to the surface. All drill cuttings will be safely and securely contained during removal. If the casing is non-removable, the casing and conductors will be cut 4' below grade. The bed will then be completely pressure-filled with cement grout by using a tremie tube technique. The cement grout used shall be rated at 4000 psi (25.58 MPa). All cables and raceways installed to service the bed shall be excavated and removed. Once everything has been removed and/or cut, plugged with cement, and abandoned in place, all disturbed areas will be backfilled and graded.

**ATTACHMENT 1 – Survey Plats**



# WPX ENERGY PRODUCTION, LLC CHACO 7-35I #159H PROPOSED PIPELINE SURVEY LOCATED IN THE SE/4 SE/4 OF SECTION 34, T24N, R7W, N.M.P.M. RIO ARriba COUNTY, NEW MEXICO



**PLAT NOTE:**  
BEFORE ANY CONSTRUCTION BEGINS CONTRACTOR IS ADVISED TO CALL ONE CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THIS PROJECT.

**BASIS OF BEARING:**  
REAL TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON MARCH 13, 2015 FROM A REFERENCE STATION POSITIONED IN NW/4 NW/4 OF SECTION 6 T23N, R6W



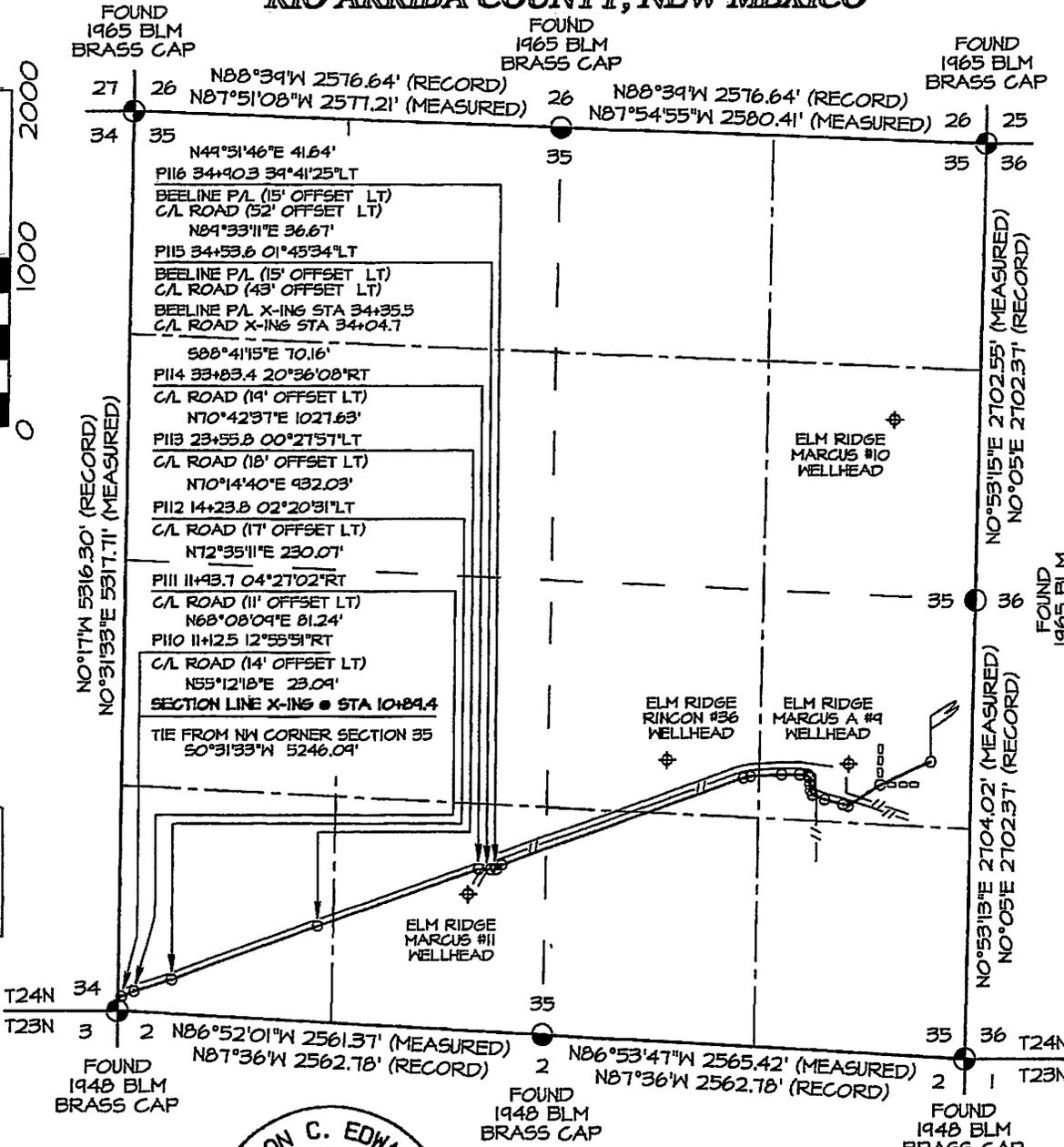
~ SURFACE OWNERSHIP ~ Bureau of Land Management	
9+91.6 TO 10+89.4	97.8 FT . 5.9 RODS

Prepared for: WPX ENERGY PRODUCTION P.O. BOX #640 AZTEC, NM 87410		Land Surveyor: Jason C. Edwards	CHECKED: JCE DRAWN BY: EDO
		Mailing Address: Post Office Box 6612 Farmington, NM 87499	
		Business Address: 111 East Pinon Street Farmington, NM 87402 (505) 325-2654 (Office) (505) 326-5650 (Fax)	
<b>SURVEYS, INC.</b>			

I, Jason C. Edwards, a registered professional surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

**JASON C. EDWARDS** Date: April 1, 2015  
Jason C. Edwards  
New Mexico LS #15269

# WPX ENERGY PRODUCTION, LLC CHACO 27-35I #159H PROPOSED PIPELINE SURVEY LOCATED IN THE S/2 OF SECTION 35, T24N, R7W, N.M.P.M. RIO ARriba COUNTY, NEW MEXICO



**BASIS OF BEARING:**  
REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON MARCH 13, 2015 FROM A REFERENCE STATION POSITIONED IN NW/4 NW/4 OF SECTION 6, T23N, R6W

**PLAT NOTE:**  
BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THIS PROJECT



~ SURFACE OWNERSHIP ~  
Bureau of Land Management

10+89.4 TO 63+83.8    5294.4 FT / 320.9 RODS

Prepared for:  
WPX ENERGY PRODUCTION  
P.O. BOX #640  
AZTEC, NM 87410

Land Surveyor:  
Jason C. Edwards

Mailing Address:  
Post Office Box 6612  
Farmington, NM 87499

Business Address:  
111 East Pinon Street  
Farmington, NM 87402  
(505) 325-2654 (Office)  
(505) 326-5650 (Fax)

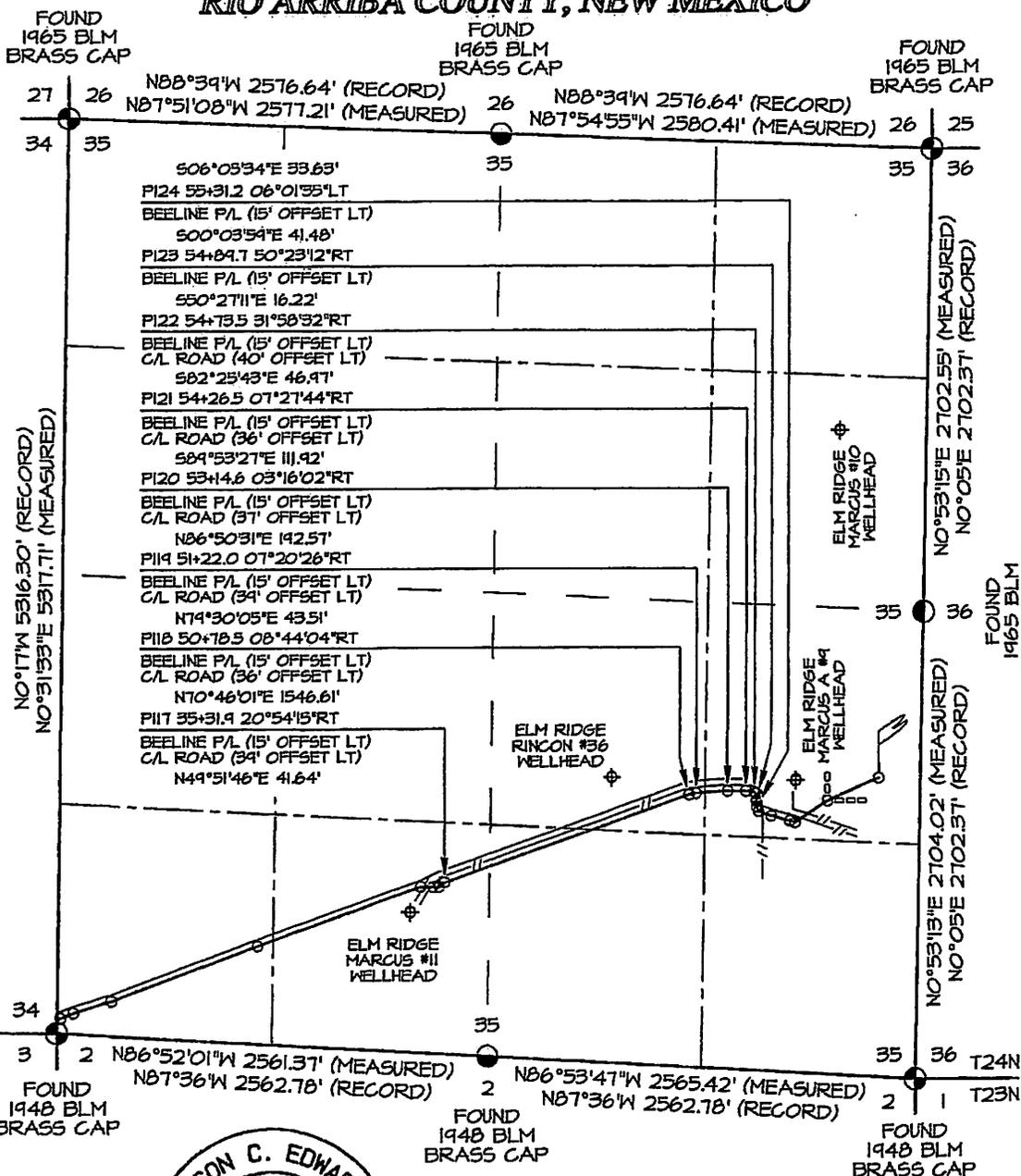
**SURVEYS, INC.**

Checked, JCE  
SHEET 1 OF 11  
FILENAME: 24123965  
DRAWN BY: EDO

I, Jason C. Edwards, a registered professional surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

**JASON C. EDWARDS**    Date: April 1, 2015  
Jason C. Edwards  
New Mexico LS #15269

# WPX ENERGY PRODUCTION, LLC CHACO 2-17-35I #159H PROPOSED PIPELINE SURVEY LOCATED IN THE S/2 OF SECTION 35, T24N, R7W, N.M.P.M. RIO ARriba COUNTY, NEW MEXICO



BASIS OF BEARING:  
REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON MARCH 13, 2015 FROM A REFERENCE STATION POSITIONED IN NW/4 NW/4 OF SECTION 6, T25N, R6W

PLAT NOTE:  
BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THIS PROJECT



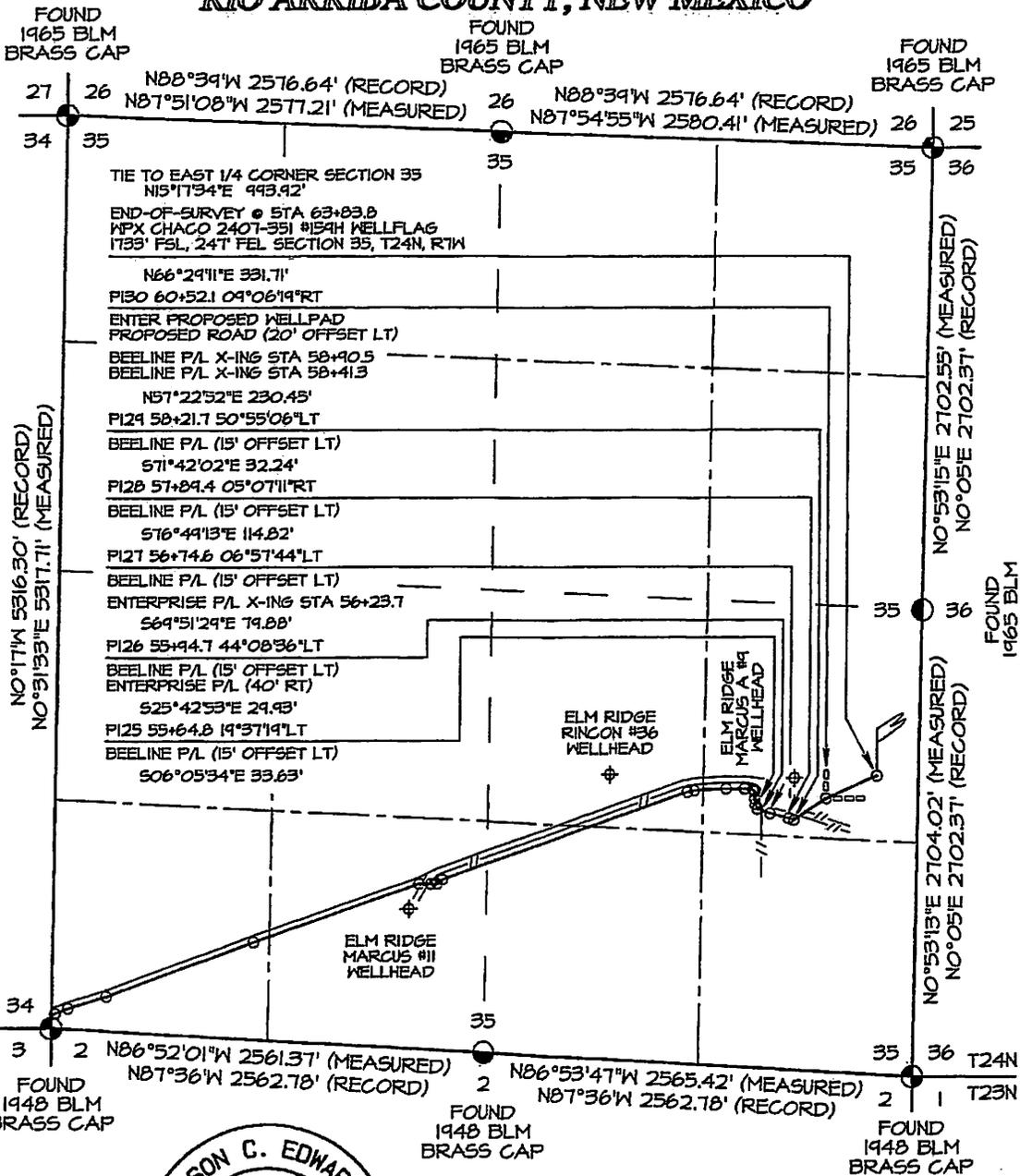
~ SURFACE OWNERSHIP ~  
Bureau of Land Management  
10+89.4 TO 63+83.8    5294.4 FT / 320.9 RODS

I, Jason C. Edwards, a registered professional surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

**JASON C. EDWARDS**    Date: April 1, 2015  
Jason C. Edwards  
New Mexico LS #15269

Prepared for: WPX ENERGY PRODUCTION P.O. BOX #640 AZTEC, NM 87410		Land Surveyor: Jason C. Edwards	CHECKED: JCE DRAWN BY: EDO
		Mailing Address: Post Office Box 6612 Farmington, NM 87499	
		Business Address: 111 East Pecos Street Farmington, NM 87402 (505) 325-2654 (Office) (505) 326-5650 (Fax)	
<b>SURVEYS, INC.</b>			

# WPX ENERGY PRODUCTION, LLC CHACO 2407-35I #159H PROPOSED PIPELINE SURVEY LOCATED IN THE S/2 OF SECTION 35, T24N, R7W, N.M.P.M. RIO ARriba COUNTY, NEW MEXICO



BASIS OF BEARING:

PLAT NOTE:

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON MARCH 13, 2015 FROM A REFERENCE STATION POSITIONED IN NW/4 NW/4 OF SECTION 6, T23N, R6W

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THIS PROJECT



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
10+89.4 TO 63+83.8	5244.4 FT / 320.9 RODS

I, Jason C. Edwards, a registered professional surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

**JASON C. EDWARDS** Date: April 1, 2015  
Jason C. Edwards  
New Mexico LS #15269

Prepared for:  
WPX ENERGY PRODUCTION  
P.O. BOX #640  
AZTEC, NM 87410

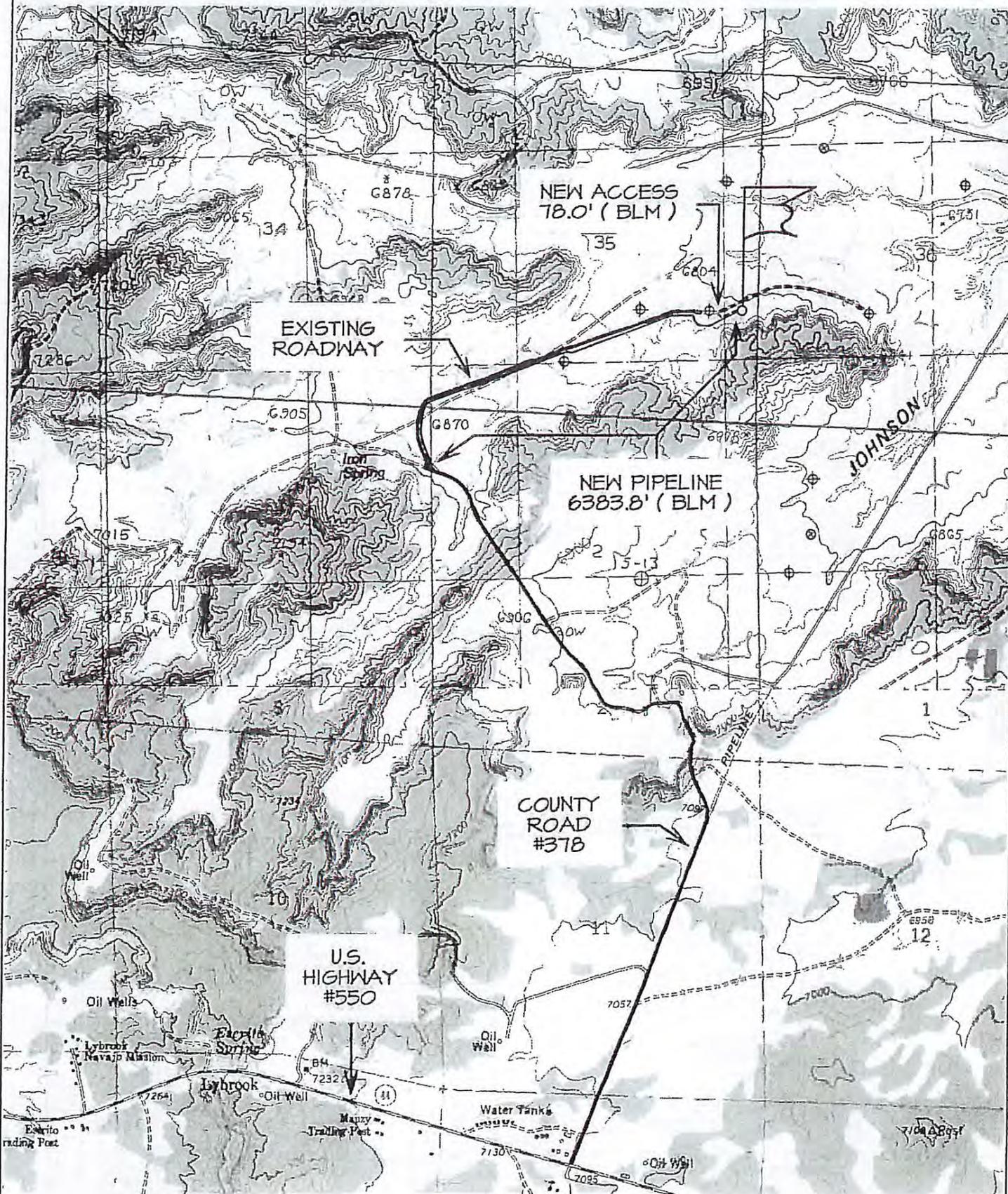
Land Surveyor:  
Jason C. Edwards  
Mailing Address:  
Post Office Box 6612  
Farmington, NM 87499  
Business Address:  
111 East Pinon Street  
Farmington, NM 87402  
(505) 325-2654 (Office)  
(505) 326-5650 (Fax)

**SURVEYS, INC.**

CHECKED: JCE  
DRAWN BY: EDO  
SHEET 9 OF 11  
FILENAME: 24789961

# WPX ENERGY PRODUCTION, LLC CHACO 24 -35I #159H

1733' FSL & 47' FEL, SECTION 35, T24N, R7W, 1.P.M.  
RIO ARIBBA COUNTY, NEW MEXICO



TOPO NAMES : LYBROOK &  
CROW MESA EAST

⊕ PRODUCING WELL   ⊗ PLUGGED & ABANDONED WELL

U.S. Environmental Protection Agency

Washington, DC 20460

Office of Water  
1400 M Street, NW  
Washington, DC 20460

2023-01-23

**ATTACHMENT 2 – Reclamation Plan**

2023-01-23

U.S. Environmental Protection Agency  
Washington, DC 20460

Office of Water  
1400 M Street, NW  
Washington, DC 20460

2023-01-23

U.S. Environmental Protection Agency  
Washington, DC 20460

Office of Water  
1400 M Street, NW  
Washington, DC 20460

# WPX Energy Production, LLC

## Reclamation Plan

### *Chaco 2407-35I Nos. 159H & 160H Oil and Natural Gas Well Pad, Access and Pipeline Project*

April 2015

---

Prepared for

# WPXENERGY



WPX Energy Production, LLC  
721 South Main Avenue  
Aztec, New Mexico 87410  
Phone: (505) 333-1800  
FAX: (505) 333-1805

Developed by



*Energy Inspection Services*  
752 Main Ave, Suite 201  
Durango, CO 81301  
970.422.8649

Reclamation Plan

**Table of Contents**

**1.0 Introduction .....1**

    1.1 Vegetation Reclamation Procedure B..... 1

    1.2 Revision of the Reclamation Plan ..... 1

**2.0 Project Description .....1**

    2.1 Estimated Total Area of Disturbance ..... 2

**3.0 Pre-Disturbance Site Visit.....3**

    3.1 Vegetation Community ..... 3

    3.2 Proposed Reclamation Seed Mix ..... 4

    3.3 Vegetation Reclamation Standards..... 4

    3.4 Pre-Disturbance Weed Survey ..... 4

    3.5 Pre-Disturbance Soil Evaluation..... 5

    3.6 Pre-Disturbance Site Photographs ..... 5

**4.0 Reclamation Techniques for Successful Revegetation .....10**

    4.1 Vegetation and Site Clearing..... 10

    4.2 Topsoil Stripping, Storage, and Replacement..... 10

    4.3 Water Management/Erosion Control Features ..... 11

    4.4 Seedbed Preparation ..... 11

    4.5 Soil Amendments ..... 11

    4.6 Seeding..... 11

    4.7 Noxious and Invasive Weed Control..... 12

**5.0 Monitoring Requirements .....12**

    5.1 Interim Reclamation..... 12

        5.1.1 Initiation ..... 12

        5.1.2 Annual Monitoring and Reporting ..... 12

        5.1.3 Attainment of Vegetation Reclamation Standards ..... 12

    5.2 Long-Term Monitoring..... 13

    5.3 Final Abandonment..... 13

    5.4 Cessation of Monitoring..... 13

**6.0 References .....13**

Reclamation Plan

---

**LIST OF TABLES**

Table 2-1. Legal coordinates for the proposed wellhead and bottom hole locations ..... 2

Table 3-1. Pre-disturbance site visit attendees ..... 3

Table 3-2. Sagebrush Community seed mix ..... 4

Table 3-3. Reclamation goal for Sagebrush Community vegetation cover ..... 4

Table 3-4. List of required pre-disturbance site photographs ..... 5

**ACRONYMS**

BLM	Bureau of Land Management
FAN	final abandonment notice
FFO	Farmington Field Office
FSL	from the south line
FWL	from the west line
GPS	global positioning system
PLS	pure live seeds
ROW	right-of-way
TUA	temporary use areas
WPX	WPX Energy Production, LLC

## Reclamation Plan

**Reclamation Plan (Procedure B)**

Applicant	WPX Energy Production, LLC (WPX)
Project Type	Well Pad, Access Road, Pipeline
Well, Oil and Gas Lease, or Right-of-Way (ROW) Name	Chaco 2407-35I Nos. 159H & 160H
Legal Location	<i>Chaco 2407-35I No. 159H: 1733 feet FSL and 247 feet FEL, Section 35, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico and Chaco 2407-35I No. 160H: 174 feet FSL and 225 feet FEL, Section 35, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico</i>
Lease Number	NMSF 078354

**1.0 Introduction**

This reclamation plan has been prepared to meet the requirements and guidelines of the Bureau of Land Management (BLM) Farmington Field Office (FFO) Bare Soil Reclamation Procedures (BLM 2013a) and Onshore Oil and Gas Order No. 1.

The WPX Energy Production, LLC (WPX) contact person for this reclamation plan is:

Andrea Felix  
Regulatory Specialist  
WPX Energy Production LLC  
721 South Main Avenue  
Aztec, New Mexico 87410  
505-333-1849

**1.1 Vegetation Reclamation Procedure B**

Completion of a Vegetation Reclamation Plan in accordance with Procedure B of the BLM/FFO Bare Soil Reclamation Procedures is required for surface disturbing actions, grants, or permits authorized by the BLM/FFO that result in bare mineral soil across an area greater than or equal to 1 acre, not including a BLM/FFO-approved working area. Working areas include areas routinely used to operate and maintain facilities or improvements. The FFO makes no distinction between interim and final revegetation processes; revegetation processes and standards are the same for all revegetation activities.

**1.2 Revision of the Reclamation Plan**

WPX may submit a request to the BLM/FFO to revise the Reclamation Plan at any time during the life of the project in accordance to page 44 of the Gold Book (USDI-USDA 2007). WPX will include justification for the revision request.

**2.0 Project Description**

WPX is proposing to construct the Chaco 2407-35I Nos. 159H and 160H well pad, access road, and well-tie pipeline. The proposed project would be located on BLM-managed land and would access federal minerals administered by the BLM/FFO. The proposed project would be located within Rio Arriba County, New Mexico, approximately 39 miles south-southeast of the town of Bloomfield, New Mexico;

## Reclamation Plan

2.5 miles northeast of Lybrook, New Mexico; 2.5 miles north of U.S. Highway 550; and 0.6 mile west of County Road 378.

Two wells, the Chaco 2407-35I 159H and 160H, would be horizontally drilled from the proposed well pad. The wells would access the federal mineral estate administered by the BLM/FFO. The legal coordinates for the wellhead surface and bottom hole locations are listed in Table 2-1.

Table 0-1. Legal coordinates for the proposed wellhead and bottom hole locations

Well Number	Location	Legal Description
159H	Wellhead	1733 feet FSL and 247 feet FEL, Section 35, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
	Bottom hole	751 feet FSL and 230 feet FWL, Section 35, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
160H	Wellhead	1734 feet FSL and 225 feet FEL, Section 35, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
	Bottom hole	2282 feet FSL and 230 feet FWL, Section 35, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico

Notes: FNL = from north line, FSL = from south line, FWL = from west line, FEL = from east line, NMPM = New Mexico Principal Meridian

WPX would construct a pipeline system in two trenches. Trench 1 will have an 8-inch steel gas/liquids line and a 6-inch poly gas/liquids line. Trench 2 will have two 6-inch steel gas/liquids lines. In addition, a 6-inch poly water pipeline will be placed in either Trench 1 or 2. The trenches, which will be offset from one another by 5 feet, will both be located within a 50-foot-wide pipeline/access road ROW corridor that is approximately 106 feet in length. The pipelines would be constructed in Section 35, in Township 24 North, Range 7 West, New Mexico Principal Meridian (NMPM). The proposed access road runs parallel to the proposed pipeline within the 50-foot wide ROW.

## 2.1 Estimated Total Area of Disturbance

Drilling of the proposed Chaco wells would require constructing an irregular shaped well pad, approximately 325-foot by 400-foot well pad (4.19 acres), with an additional 50-foot construction buffer zone on all four (2.14 acres). The resulting area would encompass a 6.33-acre working area and result in 6.00 acres of new surface disturbance.

To access the site, a 78-foot access road would be constructed within a 30-foot wide ROW (0.05 acres) from the start of the access to the edge of the well pad. Approximately 61 feet will overlap the proposed construction zone (0.06 acre). The proposed pipeline corridor would be 6,052.1 feet long from the edge of the well pad to the tie-in point on the Chaco Trunk 4 Extension 3 pipeline. This entire length will be within a 40-foot wide Right of Way (ROW) paralleling and adjacent to an existing access road (5.50 acres) with 59 feet overlapping the proposed construction zone. Approximately 331.1 feet would overlap the proposed 159H/160H well pad from the edge of the well pad to the proposed well heads. There would be approximately 3.44 acres of new surface disturbance. All disturbance would be fully reclaimed during interim reclamation.

All approved WPX wells may be utilized for staging areas. The following areas were identified at onsite for staging: WPX Chaco 168H/169H well pad and Chaco Trunk 4-2 CDP. WPX will repair and reclaim any impacts to staging areas.

## Reclamation Plan

After interim reclamation, 0.79 acres (0.76 acres associated with the well pad and 0.03 acres for the access road) would remain in use for operation (Table 2-3).

Table 0-2. Surface disturbance acreage

Feature	Acreage		Description of Acreage Following Post-Construction Reclamation		
	Total	New Disturbance	Fully Reclaimed (Reseeded and Recontoured)	Reseed Only	Long-term Disturbance
Well Pad & Construction Zone	6.33 <sup>1</sup>	6.00	4.48	1.09	0.76
Access Road Corridor	0.05	0.05	0.02	-	0.03
Pipeline Corridor	5.50 <sup>2</sup>	3.44	5.50	-	-
<b>Total</b>	<b>11.88</b>	<b>9.44</b>	<b>10.00</b>	<b>1.09</b>	<b>0.79</b>

<sup>1</sup> 0.05 acres of disturbance overlaps and has been accounted for in the Access Road Corridor.

<sup>2</sup> 0.05 acres of disturbance overlaps and has been accounted for in the Well Pad & Construction Zone area.

### 3.0 Pre-Disturbance Site Visit

The pre-disturbance site visit occurred on February 10, 2015. Table 3-1 provides a list of individuals present at the site visit.

Table 0-1. Pre-disturbance site visit attendees

Name	Affiliation	Contact Number
Roger Herrera	BLM/FFO	505-564-7703
Tony Joe	Navajo HPD	
Andrea Felix	WPX	505-333-1849
Mark Lepich	WPX	505-333-1803
Johnny Stinson	Adobe Contractors, Inc.	505-632-1486
Fred Harden	La Plata Archaeological Consultants	970-565-8708
Jacob Brown	NCE	505-486-1695
Benito Casas	NCE	505-486-1695
Mindy Paulek	Energy Inspection Services (EIS)	505-333-1894

### 3.1 Vegetation Community

The proposed project area vegetation is classified as sagebrush shrubland community. The dominant species' throughout the project area is big sagebrush (*Artemisia tridentata*). No New Mexico Department of Agriculture Class A- or B- listed species were identified within the project area.

Reclamation Plan

3.2 Proposed Reclamation Seed Mix

Disturbance will be re-contoured, and topsoil will be redistributed and prepared for seeding by the construction contractor. Ripping, disking, and seeding of the site will be done by WPX using the BLM-approved seed mix, which is shown in Table 3-2. The proposed reclamation seed mix takes into account the existing vegetation on the proposed project site.

Table 0-2. Sagebrush Community seed mix

Common Name	Scientific Name	Variety	Season	Form	PLS lbs/acre <sup>1</sup>
Fourwing saltbush	<i>Atriplex canescens</i>	VNS	Cool	Shrub	2.0
Winterfat	<i>Krascheninnikovia lanata</i>	VNS	Cool	Shrub	2.0
Sand dropseed	<i>Sporobolus cryptandrus</i>	VNS	Warm	Bunch	0.5
Western wheatgrass	<i>Pascopyrum smithii</i>	Arriba	Cool	Sod-forming	4.0
Indian ricegrass	<i>Achnatherum hymenoides</i>	Paloma or Rimrock	Cool	Bunch	4.0
Bottle brush squirreltail	<i>Elymus elymoides</i>	Tusas or VNS	Cool	Bunch	3.0
Blue flax	<i>Linum lewisii</i>	Apar	Cool	Forb	0.25
Small burnet	<i>Sanguisorba minor</i>	Delar	Cool	Forb	2.0

<sup>1</sup>Based on 60 pure live seeds (PLS) per square foot, drill seeded; double this rate (120 PLS per square foot) if broadcast or hydro-seeded.

3.3 Vegetation Reclamation Standards

Requirements for determining reclamation and its successful completion of the selected vegetation community are determined by the reclamation percent cover standards for the community, as outlined in Table 3-3. These standards must be met during post-disturbance monitoring procedures in order for the BLM/FFO to sign off on the attainment of vegetation reclamation standards.

Table 0-3. Reclamation goal for Sagebrush Community vegetation cover

Functional Group	Percent (%) Foliar Cover	Common Species
Trees/Shrubs/Grasses/Forbs	>35	Utah juniper, Piñon pine; big sagebrush, four-wing saltbush, antelope bitterbrush, alkali sacaton, Western wheatgrass, Indian ricegrass, galleta, sand dropseed, scarlet globemallow, woolly Indianwheat, fleabane, Penstemon spp., buckwheat, threadleaf groundsel.
Invasive/undesirables 10% allowed toward meeting standard of 35%.	≤10	Plants that have the potential to become a dominant species on a site where its presence is a detriment to revegetation efforts or the native plant community. Examples of invasive species include cheatgrass, Russian thistle, kochia.

3.4 Pre-Disturbance Weed Survey

During the onsite visits, the proposed action area was surveyed for noxious weeds listed on the New Mexico Department of Agriculture’s A and B list. No New Mexico Department of Agriculture Class A- or

Reclamation Plan

B-listed species were identified within the project area. The Onsite Noxious Weed form was completed and signed by the BLM/FFO representative. The form is attached to this Reclamation Plan.

**3.5 Pre-Disturbance Soil Evaluation**

The BLM/FFO representative and WPX Representative collaboratively decided at the pre-disturbance site visit that no soil testing is necessary for the proposed project area.

**3.6 Pre-Disturbance Site Photographs**

Photographs were taken of the pre-disturbance site using a digital camera with 16-megapixel capability and without zoom or wide-angle adjustments. Each photograph in the Reclamation Plan is notated with the direction the photograph was taken and the location of the photo point. The photographs locations are listed in Table 3-4.

Table 0-4. List of required pre-disturbance site photographs

Photo Point	Photographs	Location Description
A	1, 2, 3, 4	From each well pad corner, looking toward the center stake
B	5, 6, 7, 8	Four Cardinal directions from the center stake
C	9	Access Start
D	10	Access End

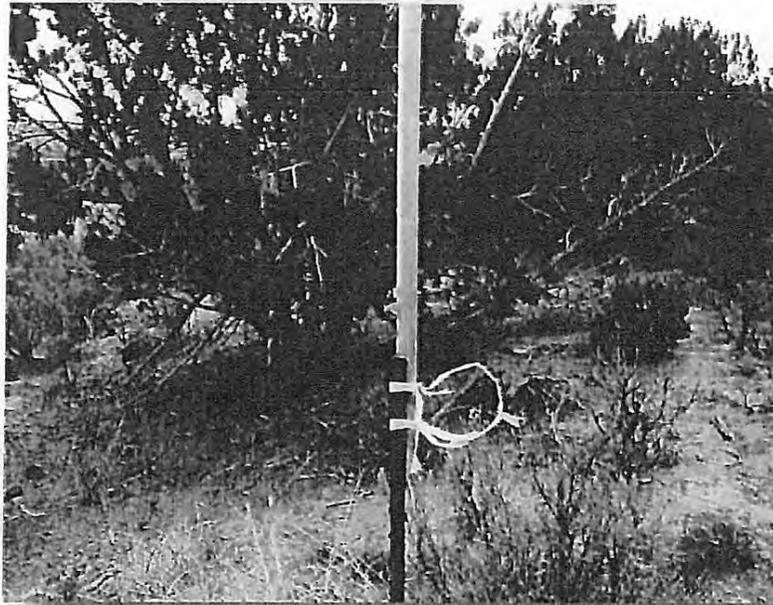


Photo Point:	A	Location:	Chaco 2407-35I 159H and 160H (corner 6)
Photo Number:	1	Photo Direction:	Southeast

Reclamation Plan



Photo Point:	A	Location:	Chaco 2407-35I 159H and 160H (corner 5)
Photo Number:	2	Photo Direction:	Northwest

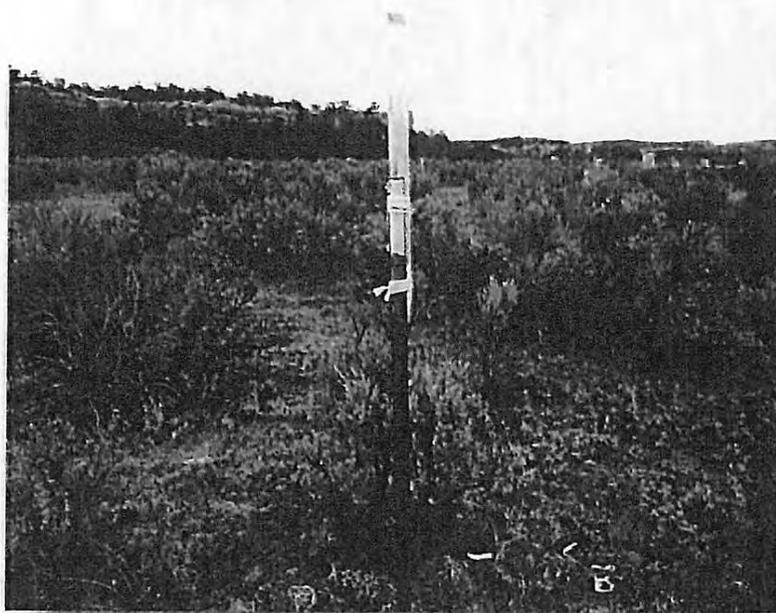


Photo Point:	A	Location:	Chaco 2407-35I 159H and 160H (corner 3)
Photo Number:	3	Photo Direction:	Southwest

Chaco 2407-35I Nos. 159H & 160H Well Pad, Access Road, and Pipeline Project

April 2015

- 6 -

Reclamation Plan

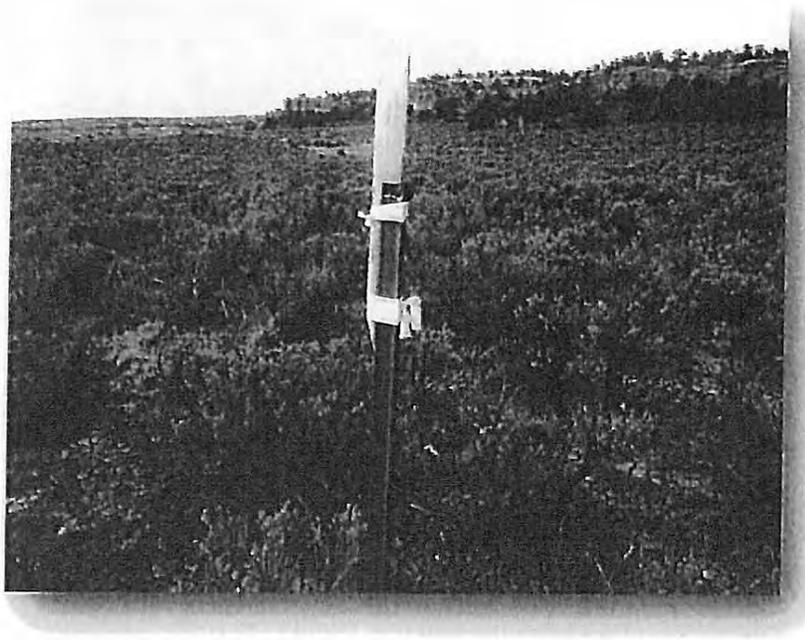


Photo Point:	A	Location:	Chaco 2407-35I 159H and 160H (corner 2)
Photo Number:	4	Photo Direction:	Southeast



Photo Point:	B	Location:	Chaco 2407-35I 159H and 160H (center stake)
Photo Number:	5	Photo Direction:	North

Chaco 2407-35I Nos. 159H & 160H Well Pad, Access Road, and Pipeline Project

April 2015

- 7 -

Reclamation Plan

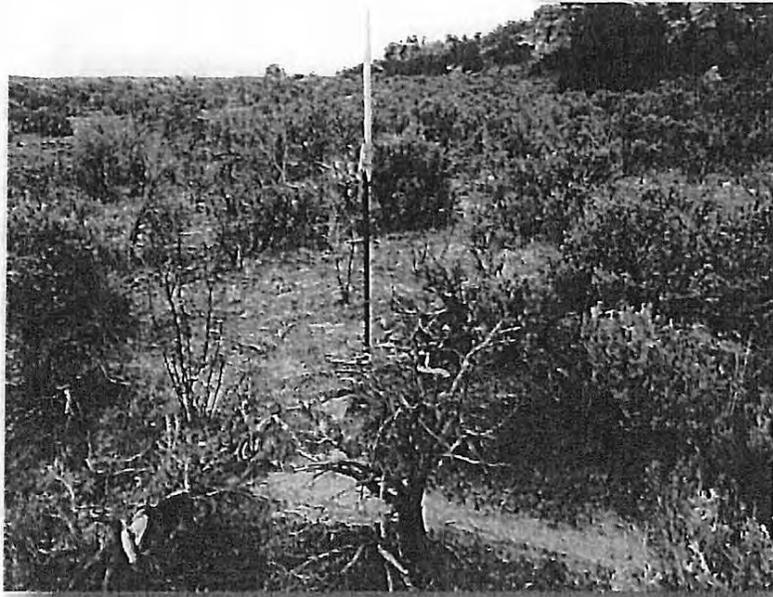


Photo Point:	B	Location:	Chaco 2407-35I 159H and 160H (center stake)
Photo Number:	6	Photo Direction:	East



Photo Point:	B	Location:	Chaco 2407-35I 159H and 160H (center stake)
Photo Number:	7	Photo Direction:	South

Chaco 2407-35I Nos. 159H & 160H Well Pad, Access Road, and Pipeline Project

April 2015

- 8 -

Reclamation Plan

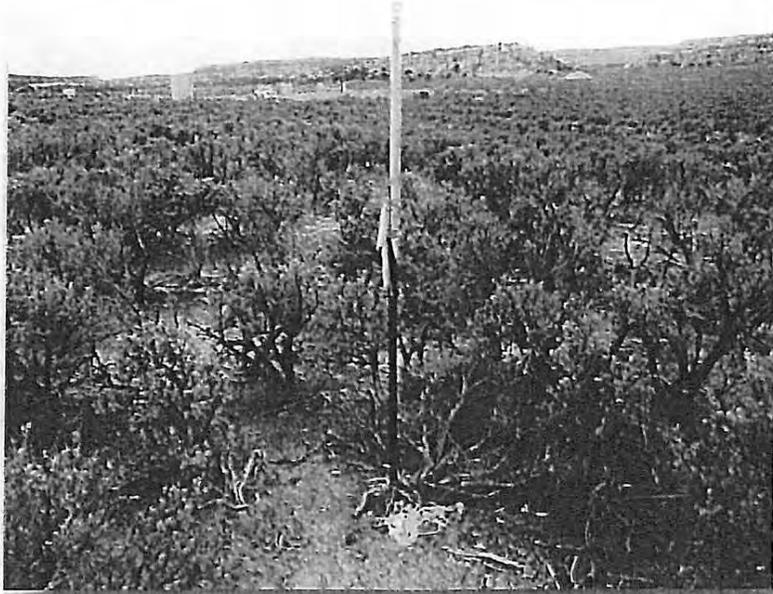


Photo Point:	B	Location:	Chaco 2407-35I 159H and 160H (center stake)
Photo Number:	8	Photo Direction:	West



Photo Point:	C	Location:	Access Start
Photo Number:	9	Photo Direction:	East-southeast

Chaco 2407-35I Nos. 159H & 160H Well Pad, Access Road, and Pipeline Project

April 2015

- 9 -

Reclamation Plan

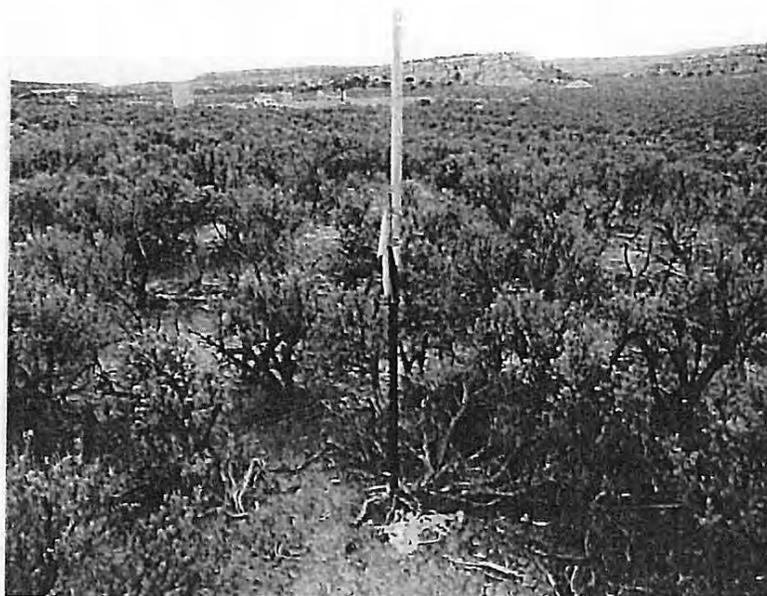


Photo Point:	D	Location:	Access End
Photo Number:	10	Photo Direction:	West-northwest

**4.0 Reclamation Techniques for Successful Revegetation**

All activities associated with the construction, use/operation, maintenance, and abandonment or termination of the Chaco 2407-351 159H and 160H wells are limited to areas approved in the Applications for Permit to Drill (APDs) and the Right-of-Way (ROW) Grants.

**4.1 Vegetation and Site Clearing**

Vegetation removed during construction, including trees that measure less than 3 inches in diameter (at ground level) and slash/brush, will be chipped or mulched and incorporated into the topsoil as additional organic matter. If trees are present, all trees 3 inches in diameter or greater (at ground level) will be cut to ground level and delimbed. Tree trunks (left whole) and cut limbs will be stacked. The subsurface portion of trees (tree stumps) will be hauled to an approved disposal facility.

**4.2 Topsoil Stripping, Storage, and Replacement**

The upper 6 inches of topsoil (if available) will be stripped following vegetation and site clearing. Topsoil will not be mixed with the underlying subsoil horizons and will be stockpiled as a berm along the perimeter of the well pad within the construction zone, separate from subsoil or other excavated material. Topsoil and sub-surface soils will be replaced in the proper order, prior to final seedbed preparation. Spreading shall not be done when the ground or topsoil is wet. Vehicle/equipment traffic will not be allowed to cross topsoil stockpiles. If topsoil is stored for a length of time such that nutrients are depleted from the topsoil, amendments will be added to the topsoil as advised by the WPX environmental scientist or appropriate agent/contractor.

## Reclamation Plan

### 4.3 Water Management/Erosion Control Features

The BLM/FFO representative and the WPX representative will work in collaboration to develop site-specific erosion control or water management features and to identify installation locations. Potential erosion control or water management features that may be used include (but are not limited to) waterbars or rolling dips for roads, sediment basins or sediment traps, check dams, silt fencing, outlet protection for culverts, erosion control blankets or geotextiles, and straw wattles.

WPX (or its contractors) may use erosion control blankets, straw bales, or straw wattles as appropriate to limit erosion and sediment transport from any stockpiled soils.

As determined during the on-site on February 10, 2015, the following best management practices will be implemented:

- No additional fill would be required to construct the pad.
- Silt traps will be built upstream of all culvert locations. Any additional need for water-control features, such as diversions and/or silt traps, will be determined at interim reclamation.

### 4.4 Seedbed Preparation

For cut-and-fill slopes, initial seedbed preparation will consist of backfilling and re-contouring. Disturbed areas will be re-contoured to blend with the surrounding landscape, emphasizing restoration of the existing drainage patterns and landform to pre-construction condition, to the extent practicable.

Within areas that will be reseeded, stockpiled topsoil will be evenly redistributed prior to final seedbed preparation. Topsoil will not be redistributed when the ground or topsoil is wet. Seedbed preparation within compacted areas will include ripping to a minimum depth of 18 inches and spacing furrows 2 feet apart. Ripping will be conducted perpendicularly in two phases, where practicable. If large clumps/clods result from the ripping process, disking will be conducted perpendicular to slopes in order to provide terracing and minimize runoff and erosion. Final seedbed preparation will consist of raking or harrowing the spread topsoil prior to seeding to promote a firm (but not compacted) seedbed without surface crusting. Seedbed preparation may not be necessary for topsoil storage piles or other areas of temporary seeding.

### 4.5 Soil Amendments

Soil amendments will be added to the topsoil, if needed, as advised by the WPX environmental scientist or appropriate agent/contractor.

### 4.6 Seeding

The seed mix chosen for this project area is listed in Table 3-2. Seeding will occur at the time of interim reclamation. A disc-type seed drill with two boxes for various seed sizes will be utilized for seeding the disturbed areas of the site. WPX or its reclamation subcontractor will ensure that perennial grasses and shrubs are planted at the appropriate depth. Intermediate size seeds (such as wheatgrasses and shrubs) will be planted at a depth of 0.5 inch, larger seeds (such as Indian ricegrass) will be planted at a depth of 1 to 2 inches, and small seeds (such as alkali sacaton and sand dropseed) will be planted at a depth of 0.25 inch. In situations where differing planting depths are not practicable with the equipment being used, the entire mix will be planted no deeper than 0.25 inch. A drag, packer, or roller will follow the seeder to ensure uniform seed coverage and adequate compaction. Seeding will be run perpendicular to slopes in order to minimize runoff and erosion.

---

Reclamation Plan

---

Drill seeding may be used on well-packed and stable soils that occur on gentler slopes and where tractors and drills can safely operate. Where drill seeding is not practicable due to topography, the contractor will hand-broadcast seed using a "cyclone" hand seeder or similar broadcast seeder. Broadcast application of seed requires a doubling of the drill-seeding rate. The seed will then be raked into the ground so the seed is planted no deeper than 0.25 inch below the surface.

#### **4.7 Noxious and Invasive Weed Control**

---

Should any noxious or invasive weeds be documented after earthwork and seeding activities, the BLM/FFO weed coordinator will provide WPX with specific requirements and instructions for weed treatments, including the period of treatment, list of approved herbicides, required documentation to be submitted to the BLM/FFO after treatment, and any other site-specific instructions that may be applicable.

### **5.0 Monitoring Requirements**

---

Monitoring will be completed according to BLM/FFO Bare Soil Reclamation Procedure B (BLM 2013b). Monitoring activities will be initiated after the project is completed (Interim Monitoring), during the post-disturbance earthwork, and seeding inspection process.

#### **5.1 Interim Reclamation**

---

##### **5.1.1 Initiation**

---

During the post-disturbance inspection at the project site, the BLM/FFO representative (in collaboration with the WPX Representative) will determine site-specific monitoring locations for photo point monitoring and vegetation line point intercept transects. The BLM/FFO will GPS the monitoring locations, take the initial monitoring photographs, and complete the initial monitoring report within 60 days of the post-disturbance earthwork and seeding inspection. The initial report will be available from the BLM/FFO.

##### **5.1.2 Annual Monitoring and Reporting**

---

WPX will be responsible for annual monitoring of the photo points and the vegetation line point intercept transects for the on-lease well pad and access road starting two years after the completion and approval of the earthwork and seeding. BLM-FFO will be responsible for the annual monitoring of the off-lease pipeline. Monitoring may occur during any time of the year. WPX will submit the initial monitoring report to the BLM by December 31 of the year monitored.

Vegetation line point intercept transects will be monitored annually by the WPX until attainment of vegetation reclamation standards is met. The BLM-FFO will monitor the pipeline ROW annually until attainment of vegetation reclamation standards is met.

##### **5.1.3 Attainment of Vegetation Reclamation Standards**

---

When vegetation on a reclaimed site appears to meet the required percent revegetation standard (see Section 3.3), WPX may request BLM/FFO concurrence that vegetation percent cover standards have been attained any time after two calendar years of completion of earthwork and seeding. WPX will submit a written report identifying that revegetation standards have been attained. The BLM/FFO will reply to the operator to confirm concurrence (or not) with a rationale for the determination within 60

---

## Reclamation Plan

---

days of receiving the request. When vegetation on the reclaimed pipeline ROW appears to meet the required percent revegetation standard (see Section 3.3), the BLM/FFO will submit a written report identifying that revegetation standards have been attained.

If the revegetation standards are not attained on any of the project, WPX and the BLM/FFO will analyze the issues that may have contributed to vegetation reclamation failure or lack of meaningful progress. Remedial actions will be developed in collaboration with the BLM if vegetation percent cover standards are not being attained.

### 5.2 Long-Term Monitoring

---

After the required percent revegetation standard has been attained, WPX and BLM-FFO will begin long-term monitoring of the respective portions of the project. Every fifth year after attainment, WPX and BLM-FFO will monitor the site at all established photo points to ensure the site remains productive and stable.

### 5.3 Final Abandonment

---

If 1 acre or more of bare soil results from earthwork required in preparation for final abandonment, WPX will follow the Vegetation Reclamation Plan in accordance with Procedure B of the BLM/FFO Bare Soil Reclamation Procedures (2013a).

If final abandonment or relinquishment earthwork results in less than 1 acre, but more than 0.1 acre of bare soil, WPX will initiate the Vegetation Reclamation Plan in accordance with Procedure A of the BLM/FFO Bare Soil Reclamation Procedures. Disturbed areas less than 0.1 acre are expected to revegetate naturally from seed sources adjacent to the disturbance (2013a).

Revegetation percent cover standards will be attained, documented, and submitted to the BLM/FFO by WPX or an exception granted before the BLM/FFO will approve a final abandonment notice (FAN) or relinquishment.

### 5.4 Cessation of Monitoring

---

Monitoring requirements will remain in effect as long as the permit, grant, or authorization remains in force and until all infrastructure or associated facilities are abandoned by established BLM procedure and a FAN or relinquishment is issued by the BLM/FFO. WPX will document that percent cover standards have been obtained when submitting a request for a FAN or a relinquishment.

## 6.0 References

---

43 CFR Part 3160, "Onshore Oil and Gas Order No. 1; Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Approval of Operations," 72 Federal Register 44 (March 2007), pp. 10328-10338.

BLM. 2013a. Farmington Field Office Bare Soil Reclamation Procedures. Available at: [http://www.blm.gov/pgdata/etc/medialib/blm/nm/field\\_offices/farmington/farmington\\_planning/surface\\_use\\_plan\\_of.Par.69026.File.dat/FFO%20Bare%20Soil%20Reclamation%20Procedures%202-1-13.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/farmington/farmington_planning/surface_use_plan_of.Par.69026.File.dat/FFO%20Bare%20Soil%20Reclamation%20Procedures%202-1-13.pdf). Accessed September 2014.

Reclamation Plan

---

BLM. 2013b. Updated Reclamation Goals. Available at:

[http://www.blm.gov/nm/st/en/fo/Farmington\\_Field\\_Office/ffo\\_planning/surface\\_use\\_plan\\_of\\_updated\\_reclamation.html](http://www.blm.gov/nm/st/en/fo/Farmington_Field_Office/ffo_planning/surface_use_plan_of_updated_reclamation.html). September 2014.

U.S. Department of the Interior - U.S. Department of Agriculture (USDI-USDA). 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+307/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.

Reclamation Plan

### Onsite Noxious Weed Form

If noxious weeds are found during the onsite, fill out form and submit to FFO weed coordinator

Operator WPK Energy Surveyor(s) Mindy Pavlek  
 Well Name and Number Chaco 2407-351 159/160 Date 02/10/15  
 Location: Township, Range, Section Sec 35, T24N, R07W  
 Location of Project NAD 83 Decimal Degrees \_\_\_\_\_

**Class A Noxious Weed – Check Box if Found**

	Alfombrilla	Diffuse knapweed	Hydrilla	Purple starthistle	Yellow toadflax
	Black henbane	Dyer's woad	Leafy spurge	Ravenna grass	
	Camelthorn	Eurasian watermilfoil	Oxeye daisy	Scotch thistle	
	Canada thistle	Giant salvinia	Parrotfeather	Spotted knapweed	
	Dalmatian toadflax	Hoary cress	Purple loosestrife	Yellow starthistle	

**Class B Noxious Weed – Check Box if Found**

	African rue	Perennial pepperweed	Russian knapweed	Tree of heaven
	Chicory	Musk thistle	Poison hemlock	
	Halogeton	Malta starthistle	Teasel	

Comments: None noted

FFO Representative: \_\_\_\_\_  
 sign and date  
 Operator Representative [Signature]  
 sign and date

**WPX SJB GATHERING, LLC  
ASSIGNMENT AND ACCEPTANCE OF LIMITED LIABILITY COMPANY INTEREST**

FOR VALUE RECEIVED, and pursuant to that certain Membership Interest Purchase Agreement dated December 31, 2015 (“MIPA”), WPX Energy Holdings, LLC, a Delaware limited liability company (the “Assignor”), hereby assigns and transfers to Shiprock Midstream LLC (f/k/a Rimrock Energy Holdings LLC), a Delaware limited liability company (the “Assignee”), all of its interest in WPX SJB Gathering, LLC, a Delaware limited liability company (the “Company”).

Effective March 9, 2016 (the “Closing Date”), Assignee shall have the right to receive from the Company the share of profits or other compensation to which the Assignor would otherwise be entitled, and the right to the return from the Company of the contribution of the Assignor to the capital of the Company. The Assignee shall upon the Closing Date have the right to exercise all of the rights and privileges which the Assignor, as a member, had in the Company.

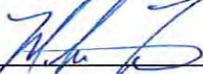
Further, in consideration for the foregoing transfer, as of the Closing Date, Assignee does hereby assume and agree to be bound by all express and implied covenants, rights, benefits, conditions, obligations and liabilities under Limited Liability Company Agreement of Company dated effective as of April 24, 2014, and hereby ratifies and affirms such agreement by signature below.

[Signature pages follow]



IN WITNESS WHEREOF, Assignor and Assignee have executed this Assignment and Acceptance of Limited Liability Company Interest to be effective as of the date first written above.

**WPX ENERGY HOLDINGS, LLC**

By:   
Name: Michael R. Fiser  
Title: Senior Vice President Marketing  
Date: March 7, 2016



*Signature Page to Assignment and Acceptance of Limited Liability Company Interest*

**SHIPROCK MIDSTREAM LLC**

By: 

Name: Thomas Lefebvre

Title: Authorized Signatory

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

*Signature Page to Assignment and Acceptance of Limited Liability Company Interest*



STATE OF NEW MEXICO  
SECRETARY OF STATE

**April 2, 2016**

CORPORATION SERVICE COMPANY

PO BOX 9315

SANTA FE NM 87504

**RE: SHIPROCK MIDSTREAM LLC**

**In New Mexico, DBA: WHIPTAIL MIDSTREAM LLC**

Entity ID: 5187222

The Office of the Secretary of State has approved and filed the Application For Amended Registration for the above captioned organization effective April 1, 2016. The enclosed Amended Certificate Of Registration is evidence of filing, and should become a permanent document of the organizations records.

The referenced approval does not constitute authorization for the above referenced organization to transact any business which requires compliance with other applicable federal or state laws, including, but not limited to, state licensing requirements. It is the organization's sole responsibility to obtain such compliance with all legal requirements applicable thereto prior to engaging in the business for which it has obtained approval of the referenced document.

Your canceled check, as validated by this office, is your receipt. If you have any questions please contact the Corporations Bureau at (505) 827-4508 or toll free at 1-800-477-3632 for assistance.

Corporations Bureau

# OFFICE OF THE SECRETARY OF STATE NEW MEXICO

## *Amended Certificate Of Registration*

OF

**SHIPROCK MIDSTREAM LLC**

**5187222**

DELAWARE

**In New Mexico, DBA: WHIPTAIL MIDSTREAM LLC**

The Office of the Secretary of State certifies that the Application For Amended Registration, duly signed and verified pursuant to the provisions of the

**Limited Liability Company Act**

**(53-19-1 To 53-19-74 NMSA 1978)**

have been received and are found to conform to law. Accordingly, by virtue of the authority vested in it by law, the Office of the Secretary of State issues this Amended Certificate Of Registration and attaches hereto a duplicate of the Application For Amended Registration.

Dated: **April 1, 2016**

In testimony whereof, the Office of the Secretary of State has caused this certificate to be signed on this day in the City of Santa Fe, and the seal of said office to be affixed hereto.



**Brad Winter  
Secretary of State**



New Mexico Secretary of State

325 Don Gaspar, Suite 300 · Santa Fe, NM 87501 (800) 477-3632 · www.sos.state.nm.us



\*FLLC#1\*

SUBMIT ORIGINAL AND A COPY TYPE OR PRINT LEGIBLY

FILED SOS Corporation Bureau

APR 01 2016

Foreign Limited Liability Company APPLICATION FOR AMENDED CERTIFICATE OF REGISTRATION

The undersigned limited liability company, in order to apply for an Amended Certificate of Registration under the New Mexico Limited Liability Company Act, submits the following statement:

1. The name of the limited liability company is (include NM CORP #):

Shiprock Midstream LLC (NM Corp # 5187222)

2. A Certificate of Registration was issued to this company on: March 8, 2016

3. The limited liability company name has been changed to: Amending #2 to add a d/b/a name: Whiptail Midstream LLC

4. If the identity of the persons in whom management of the limited liability company is vested has changed since the filing of the original application for Certificate of Registration, the names of the persons currently vested with management of the company are as follows:

Dated: March 28, 2016

Shiprock Midstream LLC

Name of Limited Liability Company

By: [Signature] Signature of Authorized Person

THIS APPLICATION MUST BE ACCOMPANIED BY AN ORIGINALLY AUTHENTICATED COPY OF THE AMENDED ARTICLES OF ORGANIZATION AS FILED IN THE DOMESTIC STATE.

Form FLLC-AM (revised 6/13)

RECEIVED SOS Corporation Bureau

APR 01 2016

FILED  
SOS  
Corporation Bureau

APR 01 2016

# Delaware

Page 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "SHIPROCK MIDSTREAM LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE THIRD DAY OF MARCH, A.D. 2016.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "SHIPROCK MIDSTREAM LLC" WAS FORMED ON THE TWENTY-THIRD DAY OF DECEMBER, A.D. 2015.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.



*Jeffrey W. Bullock*  
Jeffrey W. Bullock, Secretary of State

5916370 8300

SR# 20161481988

You may verify this certificate online at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)

Authentication: 201928711

Date: 03-03-16

RECEIVED  
SOS  
Corporation Bureau

APR 01 2016