APPENDIX A

USACE PRECONSTRUCTION NOTICE AND AQUATIC RESOURCE REPORT



# U.S. Army Corps of Engineers South Pacific Division



# Nationwide Permit Pre-Construction Notification (PCN)

This form integrates requirements of the U.S. Army Corps of Engineers (Corps) Nationwide Permit Program within the South Pacific Division (SPD). Boxes 1-10 must be completed to include all information required by General Condition 32. Box 11 (or other sufficient information to show compliance with all General Conditions) must be completed for activities in Arizona, California, Nevada, and Utah, and is recommended for activities in Colorado and New Mexico. If additional space is needed, please provide as a separate attachment. Please refer to the *Instructions for the South Pacific Division Nationwide Permit Pre-Construction Notification (PCN)* (Instructions) for instructions for completing the PCN, as well as additional information on the attachments and tables included with this PCN that may be used.

0. To be filled by the Corps							
Application Number:	Date Received:			Date Complete:			
1. Prospe	ective Permittee and Ag	ent Name and	Addresse	es (see Instructio	ons)		
a. Prospective Permittee         First - Mr. Gabriel       Middle         Company - Chevron Environmental Management Co.         A State Highway 28		Email Address -	Gariel.Herr	era@chevron.com	Zin - 87556		
		City - Questa State - NM Zip - 87556 Phone (Business) - (575) 586-7571					
b. Agent (if applicable)				,			
First	Middle						
Address	)	City			Zip		
c. Statement of Authoriz	zation: I hereby authorize						
Signature o	of Applicant	_		Date	_		

2. Name and Location of the Proposed Activity (see Instructions)				
The proposed work would involve multiple-single and com Boxes 2 through 10, and 11, if applicable.	plete projects. See attachment for the information required in			
a. Project Name or Title:	b. County, State:			
Questa Tailings Pipeline Removal	Taos County, New Mexico			
c. Name of Waterbody: Upper Rio Grande Watershed, USGS 13	3020101 (see attached Table 1, Figures 1 - 8, and Appendices A & B)			
d. Coordinates:				
Unknown (please provide other location descriptions below	N)			
Latitude - Longitude -	*See attached Table 1 for Lat/Long Coordinates			
e. Other Location Description (optional, see instructions):				
Location of the decommissioned tailings pipeline ro	ute is shown on attached Figures 1 through 9.			
f. Driving Directions to the site (optional, see instructions)	):			
Travel east of the Village of Questa, NM, along Stat River Crossing at confluence with Columbine Creek Bridge (2nd Red River Crossing), then west to just e Crossing). Turn southwest onto Moly Mine Road, tra Red River Crossing).	K). Continue west along State Route 38 to Thunder			
3. Specific NWP(s) you want to use to auth	orize the proposed activity (see Instructions)			
NW12, Utility Line Activities				
4. Description of the Propos	sed Activity (see Instructions)			
tailings pipeline begins approximately 7 miles east of the Village of Q River Canyon, through the Village of Questa, NM, terminating at the on property owned by Chevron (CEMC) and the USFS. A portion of t Columbine Creek (a tributary to the Red River), Embargo Ditch, and expected at the four Red River crossings (see Table 1). Pipeline & st support buildings, two of the three old bridges, and the elevated trest	s a slurry, from the mine to the Tailings Facility (see Figures 1 - 8). The Questa, NM, at the Questa Mine, parallels Highway 38, down the Red Tailings Facility. The majority of the tailings pipeline was constructed the pipeline cross private property. The pipeline crosses Red River, unnamed ditches (see Figures 2 through 8). Temporary impacts are			
b. Purpose of the Proposed Activity:				
Remove above ground and grout in place below gro structures, and reclaim the pipelines route.	ound decommissioned tailings pipeline, associated			

c.	Direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of
lo	ss of wetlands and other waters of the U.S. expected to result from the NWP(s) activity:

The environmental benefits are expected to far outweigh the potential of environmental impacts. Impacts to riverine and wetlands are expected to be minimal and temporary while removing the pipeline and associated structures (see Appendix A, Aquatic Resources Inventory). No wetlands are expected to be lost. No water of the U.S are expected to be lost as a result of pipeline removal and reclamation. Three of the four pipeline river crossings will require vehicle and foot traffic access to remove the pipeline installed under bridge structures and to remove any unused bridge structures not needed for other purposes. Temporary bridges may be installed across water bodies and wetlands when existing structures (roads, permanent bridges) are unavailable to provide foot and vehicle traffic access. Sediment will be disturbed briefly during vehicle and foot traffic access at the 2nd, and 3rd River Crossings and at the Elevated Trestle River Crossing. Regrading and reclamation at the Lower Dump Sump will preserve the existing irrigation ditch. The ditch and ephemeral stream crossings will not require access to wetlands to remove the pipeline. Wetlands associated with Embargo Ditch (aka North Ditch) will not be impacted because the below ground sections will be grouted in place.

d. Description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity:

Sediment release at the crossings will be minimized by using temporary matting or other temporary bridges installed to allow vehicle and foot traffic access to the piping and associated bridge structures. Sediment control best management practices (BMPs) will be implemented under EPA-required storm water pollution prevention plan (SWPPP).

e. Any other NWP(s), Regional/Programmatic General Permit(s) or Individual Permit(s) used or intended to be used to authorize any part of the proposed activity or any related activity:

The tailings pipeline requires decommissioning and removal under the following state and federal permits/actions 1) Mine Permit (TA001RE) issued by NM-MMD under the New Mexico Mining Act, 2) Discharge permit (DP933) issued by NMED, and 3) Removal AOC (Docket No. 06-09-12) issued by EPA under CERCLA.

f. Have sketches been provided containing sufficient detail to provide an illustrative description of the proposed activity?

× Yes, Attached □ No \*(See attached Figures 1 through 8 and photographs in Appendix B)

N/A; The activity is located in the Los Angeles District boundaries of Arizona and California, See Attachment 1

N/A, The activity is located in the San Francisco District boundaries of California, See Attachment 2

N/A, The activity is located in the Sacramento District boundaries of California, Nevada, or Utah, See Attachment 3

### 5. Aquatic Resource Delineation (see Instructions)

a. Has a delineation of aquatic resources been conducted in accordance with the current method required by the Corps?  $\boxtimes$  Yes  $\square$  No \*see Appendix A

If yes, please attach a copy of the delineation

Note: If no, your PCN is not complete. In accordance with General Condition 32, you may request the Corps delineate the special aquatic sites and other waters on the project site, but there may be a delay. In addition, the PCN will not be considered complete until the delineation has either been submitted to or completed by the Corps, as appropriate.

b. If a delineation has been submitted, would you like the Corps to conduct a jurisdictional determination (preliminary or approved)? 
Yes XNo

If yes, please complete, sign and return the attached *Appendix 1 – Request for Corps Jurisdictional Determination (JD)* sheet or provide a separate attachment with the information identified in Appendix 1.

### 6. Compensatory Mitigation (see Instructions)

a. Will the proposed activity result in the loss of greater than 1/10-acre of wetlands? Xes No

If yes, describe how you propose to compensate for the loss of each type of wetland: \*see Appendix A

Impacts to 0.12 acres of riverine and 0.03 acres of wetlands is expected. Temporary impacts to aquatic resources will occur in areas where foot and vehicle traffic enter the wetland and/or stream. No compensatory mitigation will be needed.

Existing vegetation removal is expected to be minimal as most of the pipeline follows highway right-of-way (gravel shoulder) and existing Mine and USFS access roads. Reclaimed areas will be seeded with a native mix. All reclaimed areas will be regraded to match the surrounding topography and BMPs will be installed during construction and left in place until seeded vegetation is established. Stockpiling of fill material is expected to be minimal because graded areas were designed to achieve a cut/fill balance. All stockpiles will be bounded by BMPs. Temporary bridges will be installed at designated crossings of perennial and intermittent streams for foot and construction traffic.

Note: for the loss of less than 1/10 acre of wetlands, or if no compensatory mitigation is proposed, the Corps may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

b. Will the proposed activity result in the loss of streams or other open waters of the U.S.? 
Yes X No

If yes, provide a description of any proposed compensatory mitigation for the loss of each type of stream or other open water:

Construction activities are not expected to result in the loss of streams or open waters. Reclaimed areas will be graded to match existing topography. The existing pipeline follows the highway right-of-way and Mine and USFS access roads. Temporary bridges will be installed at designated crossings of perennial and intermittent streams.

Note: if no compensatory mitigation is proposed, the Corps may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in no more than minimal adverse environmental effects.

## 7. Endangered Species Act (ESA) Compliance (see Instructions)

a. For non-Federal permittees (if Federal permittee, check N/A and skip to 7(d)): N/A

(1) Is there any Federally-listed endangered or threatened species or critical habitat that might be affected or is in the vicinity of the activity? 🛛 Yes 🗌 No

(2) Is the activity located in designated critical habitat for Federally-listed endangered or threatened species? 🗌 Yes 🛛 🗙 No

If yes to either (1) or (2), include the name(s) of those endangered or threatened species that might be affected by the proposed activity or might utilize the designated critical habitat that might be affected by the proposed activity:

1. Canada lynx (Lynx canadensis)

If no to both (1) and (2), proceed to Box 8.

2. Southwestern Willow Flycatcher (Empidonax traillii extim

3. New Mexico meadow jumping mouse (Zapus hudsonius 4. Yellow-billed Cuckii (Coccyzus americanus)

5. Mexican Spotted Owl (Strix occidentalis lucida) 6.

\*see Appendix A for details

Note: If yes to either (1) or (2), note per General Condition 18(c), you shall not begin work on the activity until notified by the Corps that the requirements of the ESA have been satisfied and that the activity is authorized.

b. Has information sufficient to initiate consultation with the U.S. Fish and Wildlife Service/National Marine Fisheries Service for compliance with Section 7 of the ESA been prepared? Xes No

\* see Appendix A for details

If yes, please attach a copy of the information.

c. Additional information you wish to provide regarding compliance with the ESA, if applicable:

CEMC submitted Application for Transportation and Utility Systems and Facilities on Federal Lands to the USFS relating to the portion of the pipeline crossing USFS lands, including the 1st Red River Crossing, Columbine Creek Crossing, and the 3rd Red River Crossing. The USFWS has been contacted relating to that application and the other pipeline removal locations. Stakeholders meetings have been ongoing regarding the Questa Mine closure and pipeline removal activities.

d. For Federal permittees, you must provide documentation demonstrating compliance with ESA as a separate attachment.

### 8. Historic Properties (see Instructions)

a. For non-Federal permittees (if Federal permittee, check N/A and skip to 8(d)): N/A

(1) Is there a known historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places that the NWP may have the potential to affect?  $\Box$  Yes  $\boxtimes$  No

If yes to (1), state which historic property may have the potential to be affected by the proposed activity:

1.	2.
3.	4.
5.	6.

### OR

X A vicinity map indicating the location of the historic property is enclosed \*see Appendix C for details

(2) If no to (1), describe the potential for the proposed work to affect a previously unidentified historic property:

Impacts to previously unidentified historic property is expected to be minimal. Chevron contracted Arcadis to conduct cultural resources surveys in December 2017 and April and May 2018 (see Appendix C). If historic property is discovered during the project, the NM-HPD will be contacted.

Note: If yes to (1), note per General Condition 20(c), you shall not begin the activity until notified by the Corps that the activity has no potential to cause effects or that consultation under Section 106 of the National Historic Preservation Act (NHPA) has been completed.

b. Has information sufficient to initiate consultation with the State Historic Preservation Officer/Tribal Preservation Officer for compliance with Section 106 of the National Historic Preservation Act (NHPA) been prepared?

 $\boxtimes$  Yes  $\square$  No \*see Appendix C

If yes, please attach a copy of the information.

c. Additional information you wish to provide regarding compliance with the NHPA, if applicable:

The NM-HPD has been engaged as a stakeholder. Chevron contracted Arcadis to conduct cultural resources survey. These documents have been filed with the NM-HPD. See Appendix C.

d. For Federal permittees, you must provide documentation demonstrating compliance with NHPA in a separate attachment.

# 9. National Wild and Scenic Rivers (see Instructions)

a. Will the proposed activity(s) occur in a component of the National Wild and Scenic River System or a river officially designated by Congress as a "Study River" for possible inclusion in the system while the river is in an official study status?
🗵 Yes, in a component of a National Wild and Scenic River System; 🔲 Yes, in a "study" river 🛛 No
If yes, identify the Wild and Scenic River or the "study river"
The Red River is a tributary to the Rio Grande. The Rio Grande and the lower reach of the Red River are designated as a wild and scenic river in NM, administered by the BLM/USFS. The proposed pipeline removal is approximately 2.5 miles upriver of the Red River Wild and Scenic River designation. The pipeline removal activities are not expected to impact the Wild and Scenic River area.
Note: per General Condition 16(b), you shall not begin the NWP activity until notified by the Corps that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status. If you have received written notification from the Federal agency, please attach the correspondence.
10. Section 408 Permissions (see Instructions)
a. Will the NWP also require permissions from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a Corps federally authorized Civil Works project?  [ Yes X No
If yes, have you received Section 408 permission to alter, occupy, or use the Corps project?  Yes No
If yes, please attach the Section 408 permission
If yes, note per General Condition 31, an activity that requires Section 408 permission is not authorized by NWP until the Corps issues the Section 408 permission to alter, occupy, or use the Corps project, and the Corps issues a written NWP verification.

11. Compliance with NWP General Conditions (see Instructions)						
Check	General Condition	Rationale for Compliance with General Condition				
$\boxtimes$	1. Navigation	The Red River and it's tributaries are mountain streams lacking boat traffic. The project will be completed quickly with only temporary access restrictions. This is true for each single and complete project within the total complete project.				
	2. Aquatic Life Movements	No or very minimal impacts are anticipated. The project will not result in any barriers to movement up and down the stream by fish or other aquatic species (see Appendix A).				
X	3. Spawning Areas	No or very minimal impacts are anticipated. A number of game fish occur in the section of the Red River crossed by the pipeline including triploid (sterile) rainbow trout (Oncorhychus mykiss) raised in a hatchery downstream of the project area and a wild, introduced brown trout (Salmo trutta) population. BMPs designed to control erosion would minimize sedimentation on any gravel beds used by spawning fish. No fish spawning areas were observed at the pipeline crossing of the Red River (see Appendix A).				
X	4. Migratory Bird Breeding Areas	No or very minimal impacts are anticipated. Habitat for nesting birds is present along the pipeline route, especially in wooded areas. No trees will be removed during project activities, which will minimize direct impacts to breeding birds. Any occupied bird nests discovered in shrubs, on the ground, or on human made structures will be avoided during project activities. No raptor nests were observed in therea, during the aquatic resources survey. Two migratory bird nests were found, but, they were unoccupied. No direct impacts to breeding birds is expected (see Appendix A).				
X	5. Shellfish Beds	No or very minimal impacts are anticipated. BMPs designed to control erosion would minimize sedimentation and any adverse effects on shellfish. The Sangre de Cristo peaclam, a New Mexico Game and Fish threatened species, is only found in Middle Fork Lake in Taos County, which is over 7 miles to the south of the project area near Taos Ski Valley (BISON-M 2017).				
$\overline{\times}$	6. Suitable Material	The project is a pipeline removal/grout-in-place and restoration project. The project is designed to have a zero cut/fill balance. The project is being completed under EPA- and MMN-approval of stage-specific work plans and engineering design drawings.				

X	7 Water Supply Intekce	
	7. Water Supply Intakes	No impacts are anticipated.
	8. Adverse Effects from Impoundments	Not applicable. Project will not result in any barriers or impoundments.
X	9. Management of Water Flows	No impacts are anticipated. Project will be completed when stream flow is low. Steam flows will not require management.
$\overline{\times}$	10. Fills Within 100-Year Floodplains	No impacts are anticipated. Minimal regrading will be performed during restoration. Regrading will not result in changes to 100-year flood plains.
X	11. Equipment	Excavator, flatbed trucks, end-dump trucks, backhoe, skid steer, jack-hammer (concrete demolition).
X	12. Soil Erosion and Sediment Controls	Project Stage-specificwork plans are being submitted to the MMD and EPA for review. EPA-required storm water pollution prevention plans (SWPPP) will be prepared for the project. The SWPPPs will describe the BMPs to be used for erosion and sediment controls during the project.

X	13. Removal of Temporary Fills	No anticipatedimpacts. Temporaryfills are not expected to be used during the project.
X	14. Proper Maintenance	No anticipated impacts. Regraded areas will be reseeded with EPA- and MMD-approved seed mix. Reseeded areas will be maintained following BMPs in accordance with stage-specific EPA- and MMD-approved work plans.
X	15. Single and Complete Project	The project is a single completed project.
X	16. Wild and Scenic Rivers	The project is upriver of the Wild and Scenic Rivers designationon the lower reach of the Red River and the Rio Grande River (see Table 1. Removing the pipeline will provide environmentalbenefits.
$\boxtimes$	17. Tribal Rights	Will not be affected by the project.
X	18. Endangered Species	See Box 7 above. *see Appendix A
X	19. Migratory Bird and Bald and Golden Eagle Permits	No impacts anticipated.Bald eagles may roost and/or nest in trees along the red river. Any activities that may disturb eagles would be restricted within approximately0.5 miles (USFWS recommended buffer) of nests or roosts during the appropriates easons (generally February 1 to August 15 for nesting and November 1 to April 1 for winter roosts). See Appendix.

	20 Historia Proportion	See Box 8 above.
$\times$	20. Historic Properties	
		*See Appendix C.
X	21. Discovery of Previously	
_	Unknown Remains and Artifacts	Discovery of previously unknown remains and artifacts
		will result in a stop-work in the area and immediate
		inspectionof site by archaeologist.
X	22. Designated Critical Resource	No anticipatedimpacts.
	Waters	no anticipateumpacis.
	22 Mitigation	See Device 4(d) and 6 above
$\times$	23. Mitigation	See Boxes 4(d) and 6 above.
X	24. Safety of Impoundment	
	Structures	The project will include Stage-specific health and safety
		plans, prepared before field work begins. No
		impoundment structures will be constructed or affected
		during this project.
$\mathbf{X}$	25. Water Quality, including status	No anticipatedimpacts
	of Section 401 Water Quality Certification	
	26 Coastal Zono Monogoment	
$\times$	26. Coastal Zone Management, including status of CZM	This project is not related to coastal waters.
	Consistency Certification from the	
	State of California (for projects in or	
	affecting the Coastal Zone)	
	1	1

$\overline{\times}$	27. Regional and Case-by-Case Conditions	Not applicable.
$\mathbb{X}$	28. Use of Multiple Nationwide Permits	The project will not use multiple NW permits.
$\mathbf{X}$	29. Transfer of Nationwide Permit Verifications	The project will not involve the transfer of NW permit verifications.
$\boxtimes$	30. Compliance Certification	A certification of completion report will be submitted to USACE in accordance with the permit conditions.
X	31. Activities Affecting Structures or Works Built by the United States	See Box 10 above. Not applicable.
$\boxtimes$	32. Pre-Construction Notification	This document constitutes the PCN.

TABLE

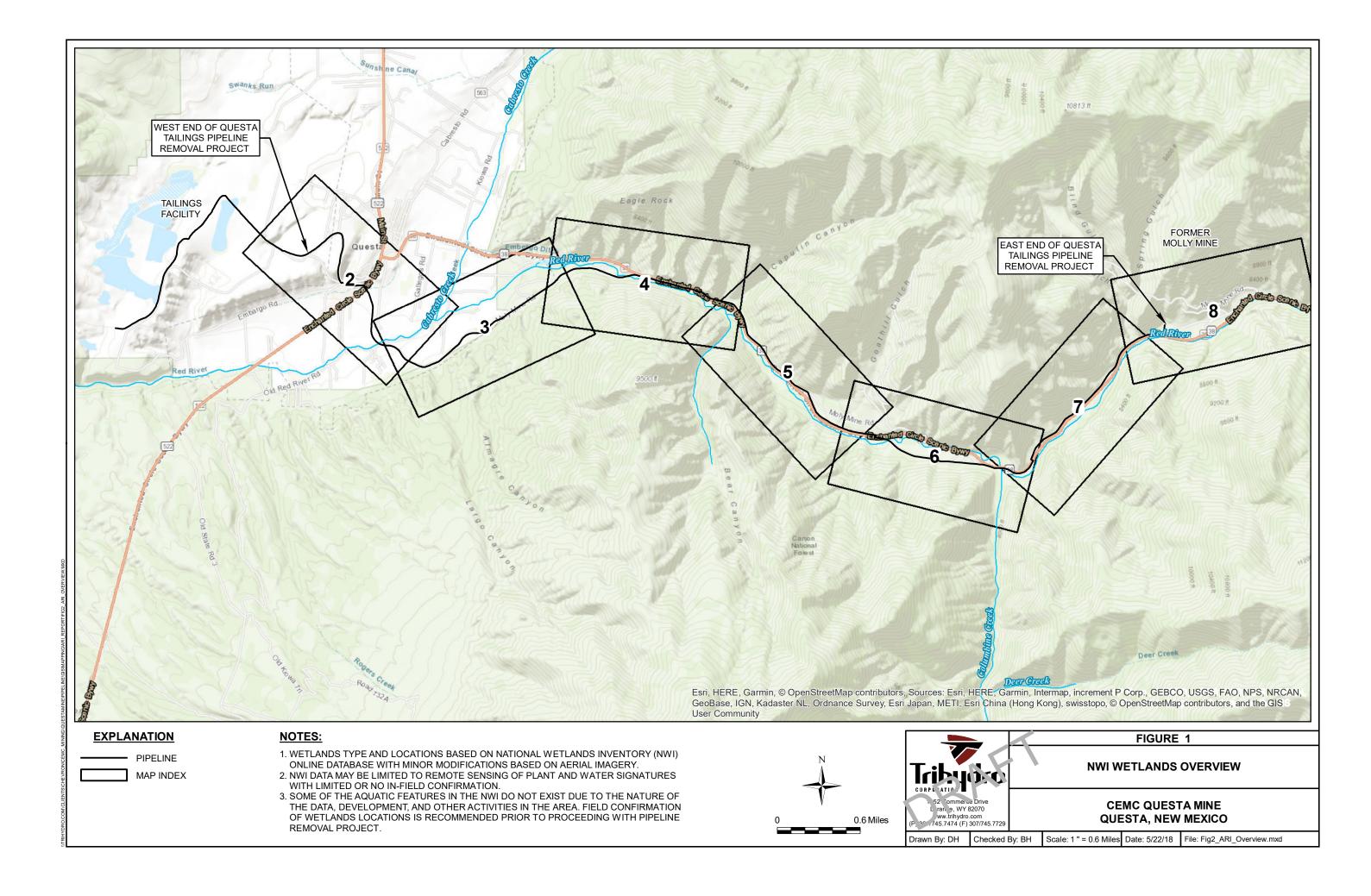


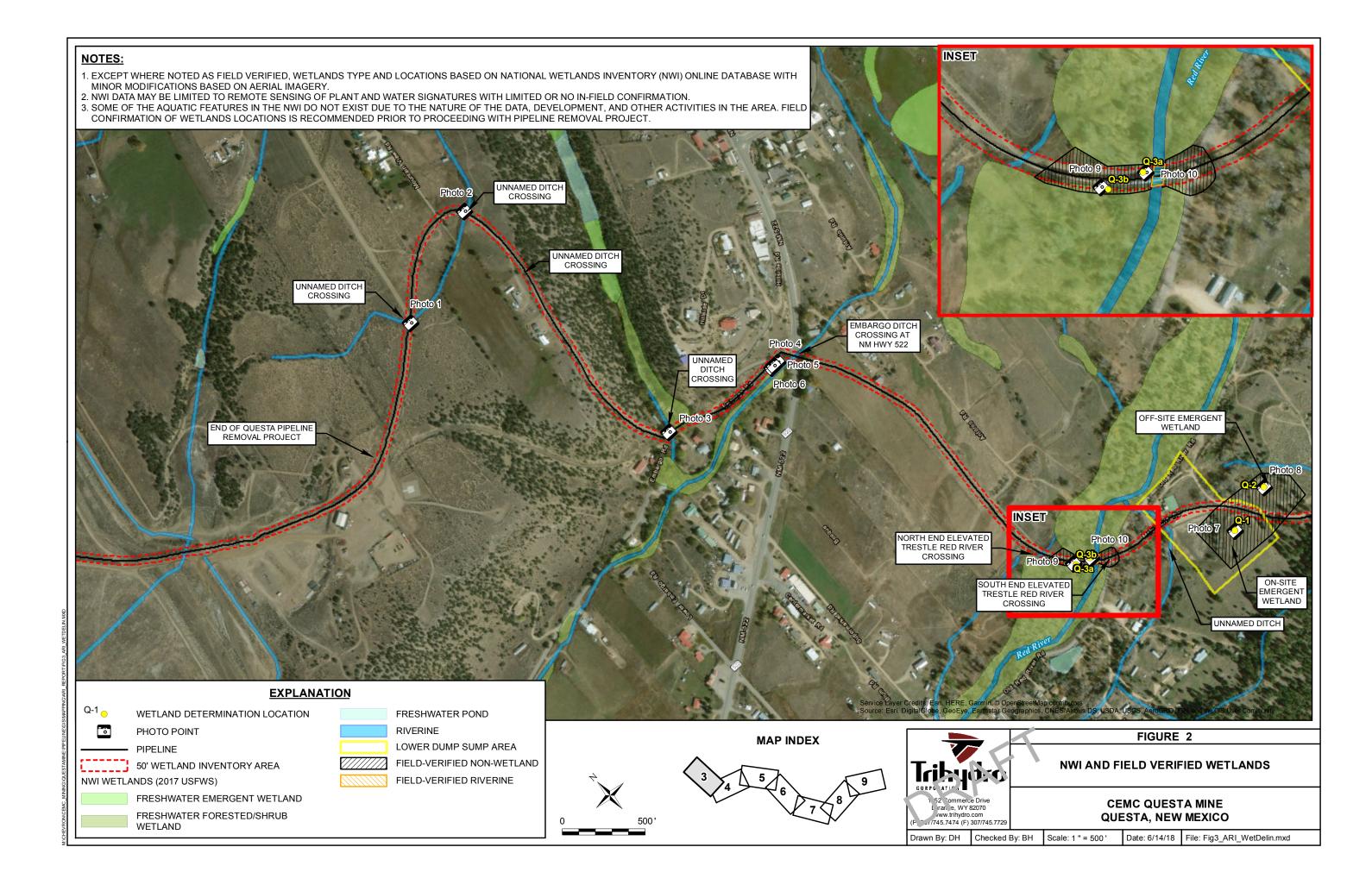
# TABLE 1. U.S. CORP OF ENGINEERS PRECONSTRUCTION NOTIFICATION<br/>QUESTA TAILINGS PIPELINE REMOVALCHEVRON ENVIRONMENTAL MANAGEMENT COMPANY, QUESTA MINE<br/>JUNE 2018

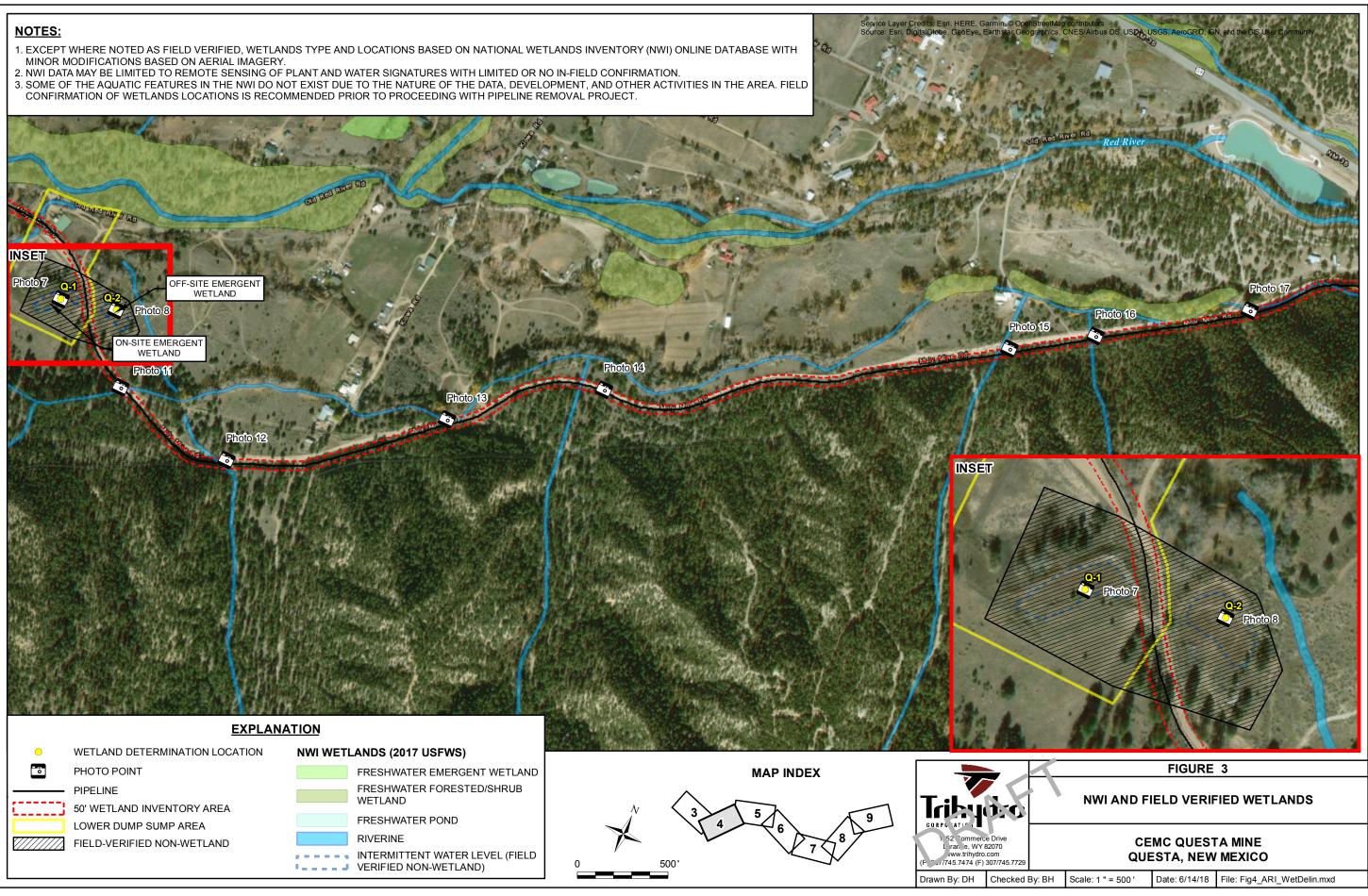
Pipeline Section Name (From Mill Area to Tailings Facility)	Description	Watershed	USGS Watershed Code	Waterbody Name at Crossing	Downstream Tributary	Latitude	Longitude	Expected Wetlands Impacts	Expected Wetlands Loss	Figure No.	Photo No.
1st Red River Crossing (By Columbine Park)	Red River at confluence with Columbine Creek (tributary)	Upper Rio Grande	13020101	Red River	Red River	36°40'53.33"N	105°30'53.97"W	Temporary Riverine Vehicle and Foot Traffic	None	7	22
2nd Red River Crossing (Thunder Bridge Crossing)	Red River crossing	Upper Rio Grande	13020101	Red River	Rio Grande	36°41'4.29"N	105°31'47.83"W	Temporary Riverine Vehicle and Foot Traffic	None	7	21
3rd Red River Crossing (East of Ranger Station)	Red River crossing	Upper Rio Grande	13020101	Red River	Rio Grande	36°42'6.96"N	105°33'47.96"W	Temporary Wetlands & Riverine Vehicle and Foot Traffic	None	5	20
Elevated Trestle Red River Crossing	Red River crossing	Upper Rio Grande	13020101	Red River	Rio Grande	36°41'41.97"N	105°35'45.20"W	Temporary Riverine Vehicle and Foot Traffic	None	3	10

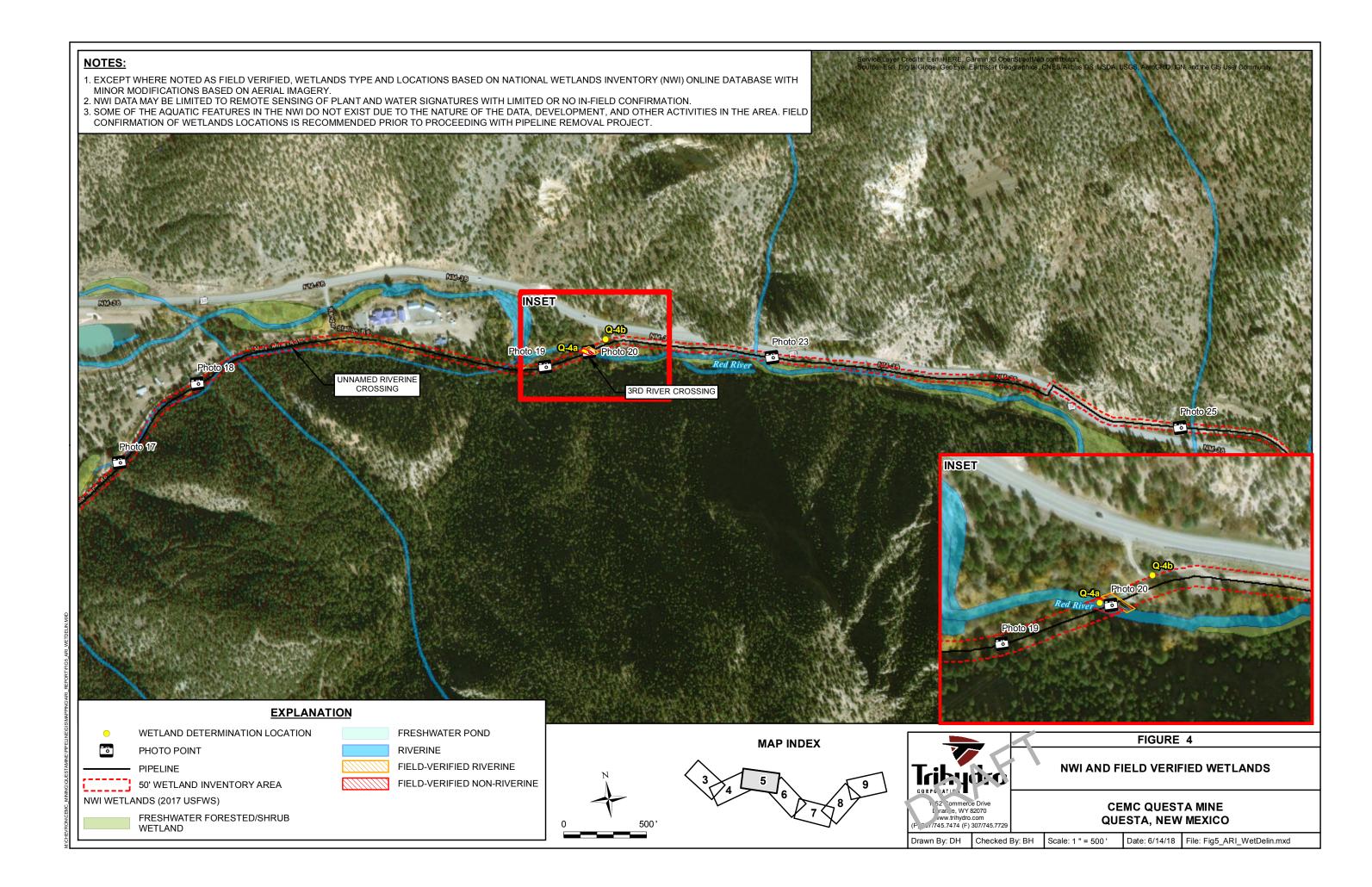
FIGURES











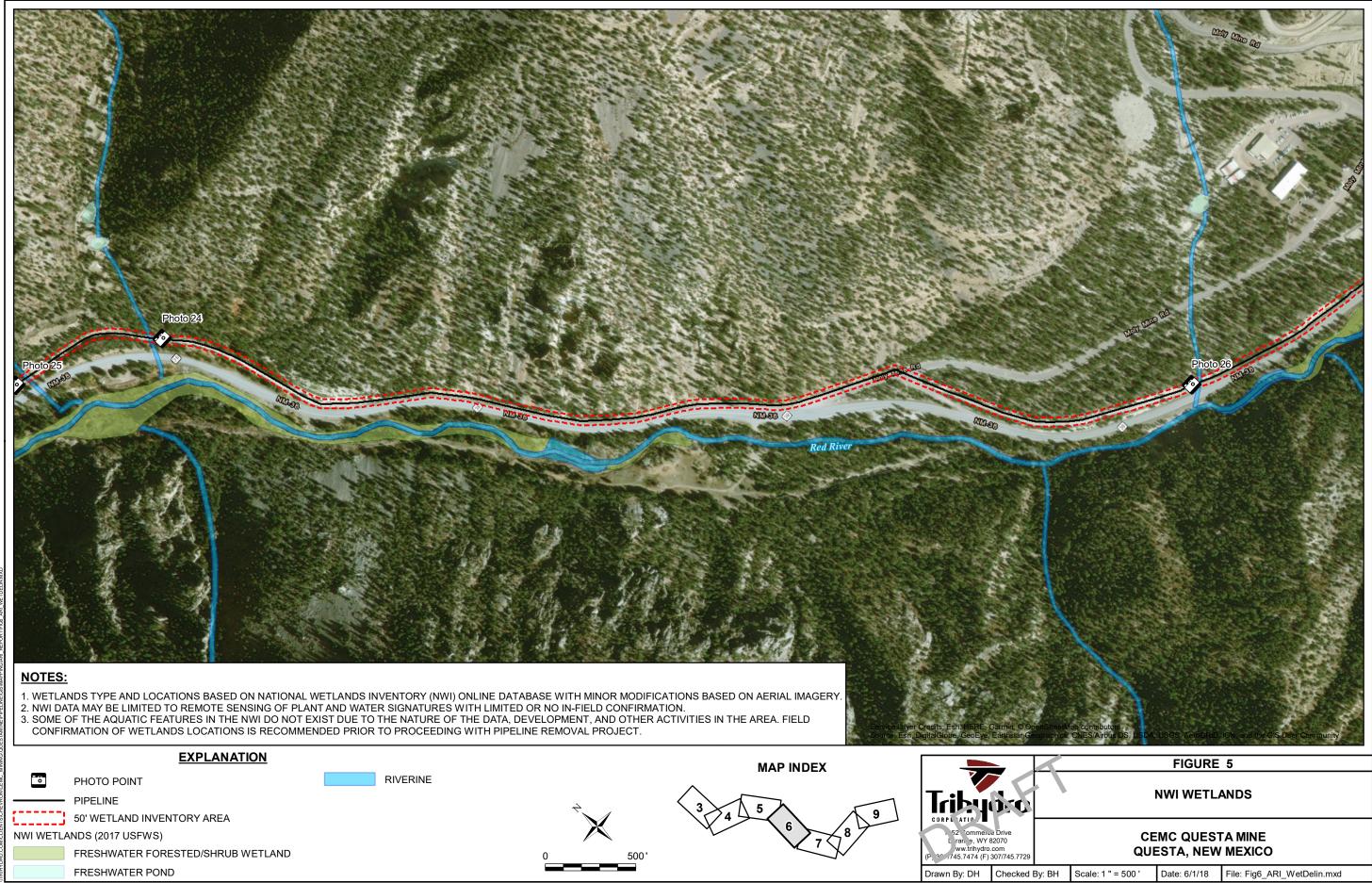
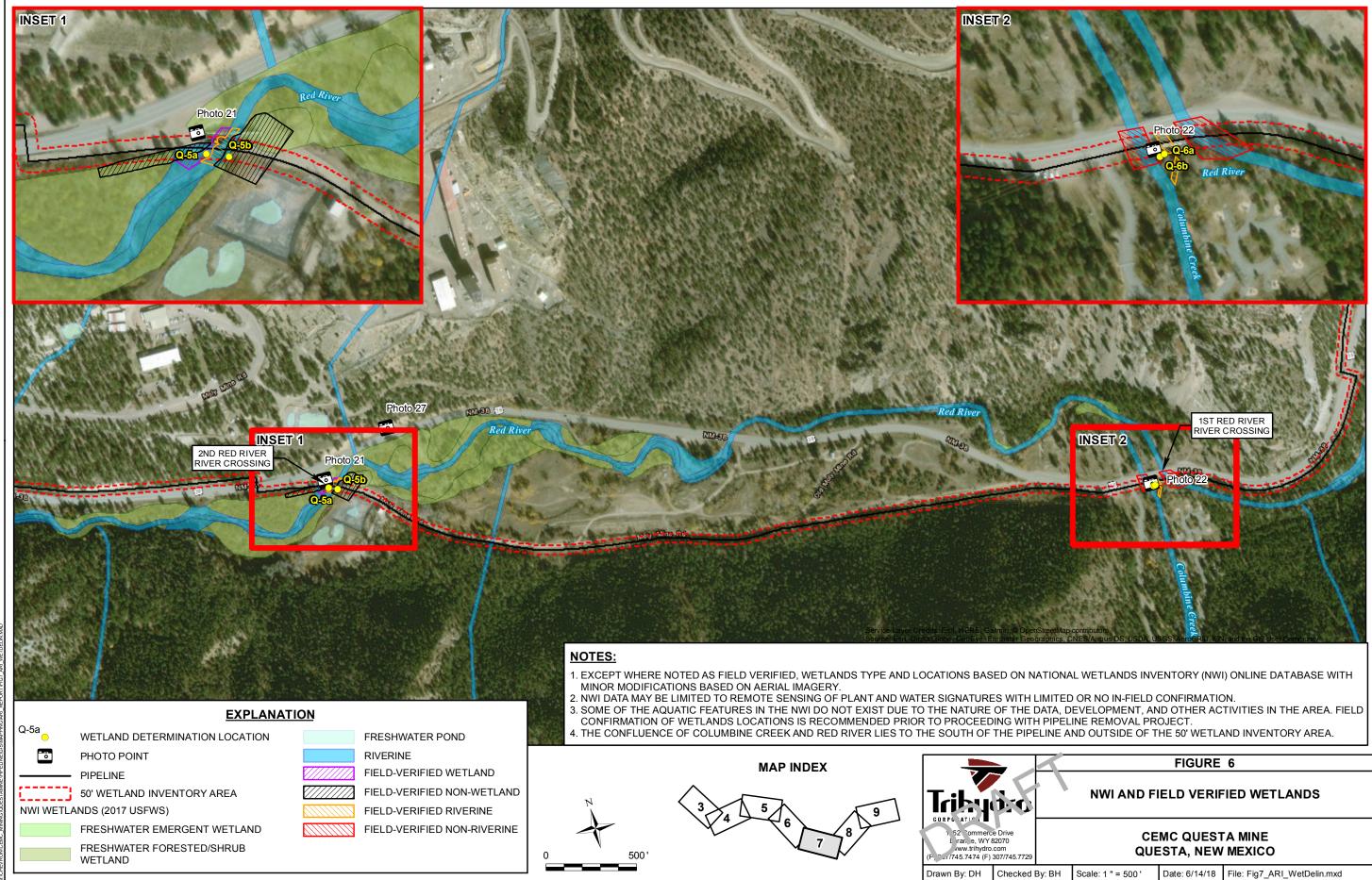


	FIGURE 5							
			ANDS					
29			EMC QUEST ESTA, NEW					
d By: BH Scale: 1 " = 500 ' Date: 6/1/18 File: Fig6_ARI_WetDelir		File: Fig6_ARI_WetDelin.mxd						



729	GEMC QUESTA MINE QUESTA, NEW MEXICO				
ed By: BH		Scale: 1 " = 500 '	Date: 6/14/18	File: Fig7_ARI_WetDelin.mxd	

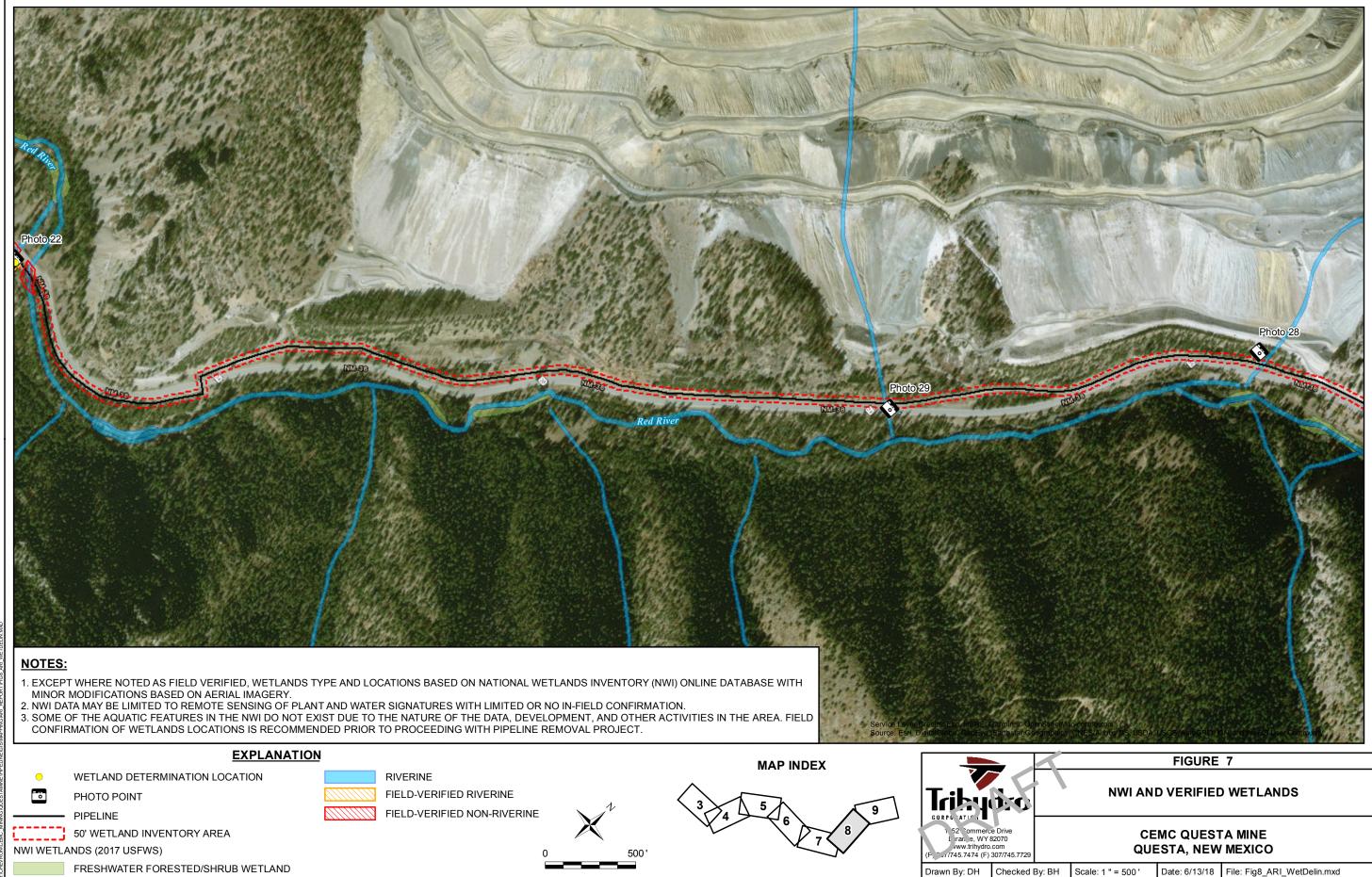
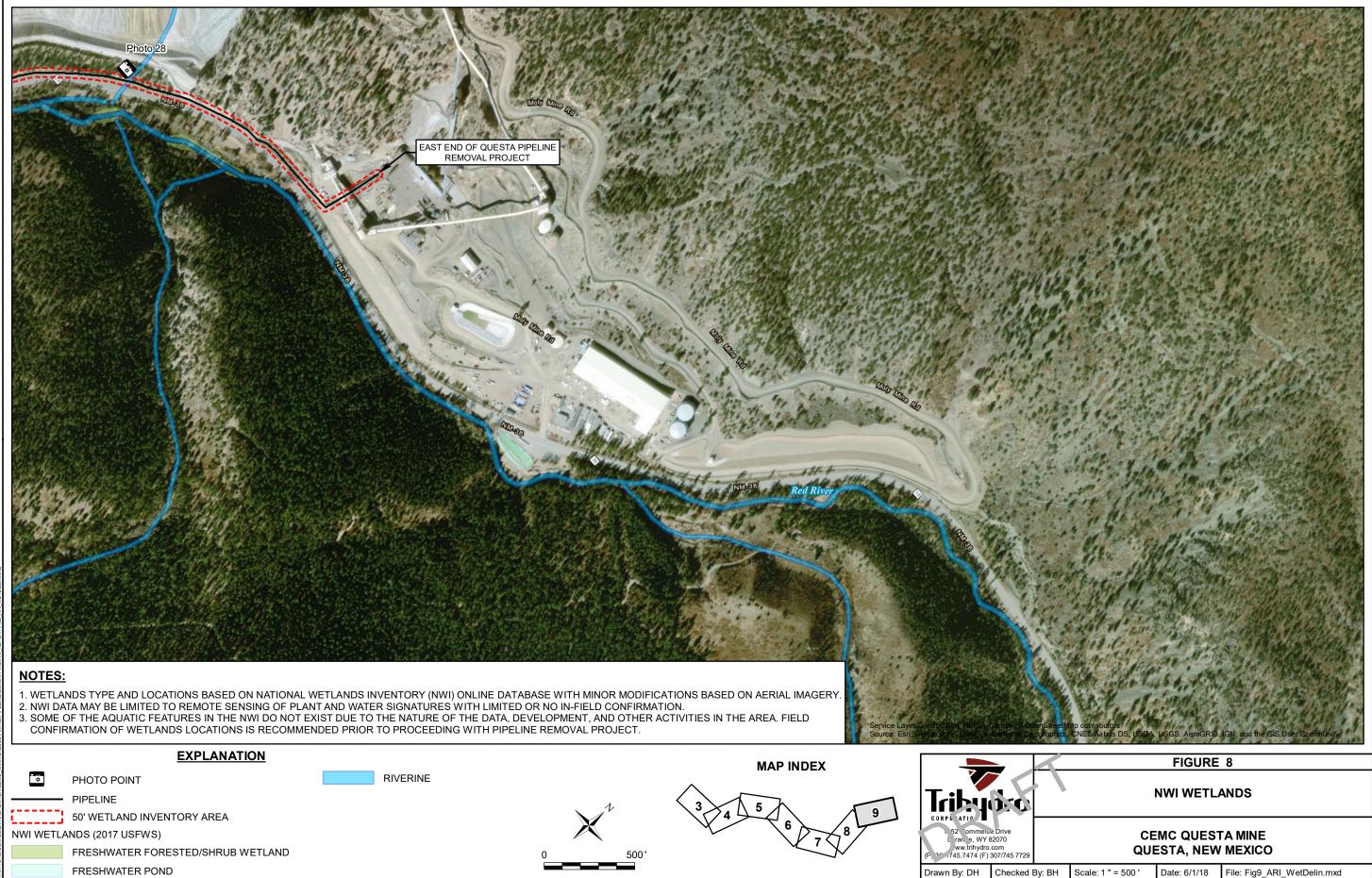


	FIGURE 7					
	NWI AND VERIFIED WETLANDS					
29		CEMC QUESTA MINE QUESTA, NEW MEXICO				
d By: BH		Scale: 1 " = 500 '	Date: 6/13/18	File: Fig8_ARI_WetDelin.mxd		



Date: 6/1/18 File: Fig9\_ARI\_WetDelin.mxd

APPENDIX A

(PROVIDED IN FINAL DOCUMENT)

AQUATIC RESOURCES INVENTORY





PHOTO LOG





Photo 1.



Photo 2.





Photo 3.

Photo 4.



Photo 5.



Photo 6. Flicker Nest







Photo 8.





Photo 10. 4<sup>th</sup> Red River Crossing



Photo 9.



Photo 12.

Photo 11.



Photo 13.



Photo 14.





Photo 16.

Photo 15.



Photo 17.



Photo 18.



Photo 19.



Photo 20a. 3rd Red River Crossing



Photo 20b. 3rd Red River Crossing



Photo 21. 2<sup>nd</sup> Red River Crossing (Thunder Bridge)



Photo 21a. 2<sup>nd</sup> Red River Crossing (Thunder Bridge)



Photo 21b. 2<sup>nd</sup> Red River Crossing (Thunder Bridge)



Photo 22a. 1<sup>st</sup> Red River Crossing



Photo 22b. 1st Red River Crossing



Photo 23a.



Photo 23b.



Photo 24.



Photo 25.



Photo 26. Culvert Crossing – Bat Roost



Photo 27.



Photo 28a. Culverts Under Road



Photo 28b.





Photo Q-1.

Photo 29.





Photo Q-2

Photo Q-3a. Non-hydric Soil





Photo Q-3b. General Area

Photo Q-3a.



Photo Q-3b. Toward River



Photo Q-3b Under Trestle – Away From River



Photo Q-4. Non-hydric Soil (Chroma greater than 2)



Photo Q-4a





Photo Q-4b.

Photo Q-5a. Iron Deposits





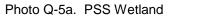


Photo Q-5a

# PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-5b. Non-hydric Coil (High Chroma)



Photo Q-5b.





Photo Q-6b

Photo Q-6a.

APPENDIX C

CULTURAL RESOURCES SURVEY SUMMARY



# **1.0 CULTURAL RESOURCES SURVEY SUMMARY**

At the request of Chevron Environmental Management Company (CEMC), Arcadis surveyed ditches and other cultural resources along the Tailings Pipeline removal corridor in December 2017 and in April and May 2018. The survey results were submitted to the New Mexico Historic Preservation Office (SHPO) under New Mexico Cultural Resource Informatin System (NMCRIS) numbers 139651 and 140384 (ARCADIS 2018a and 2018b). The cultural resources were surveyed in or near the pipeline removal stages shown in Attachment A. A finding of No Adverse Effect on Historic Properties was documented by Arcadis in both surveys.

This document summarizes the cultural survey results as they pertain to the Chevron Questa Mine Tailings Pipeline Removal Project. Excerpts from the Arcadis cultural surveys are attached to this summary, including the report cover letters, NMCRIS Investigation Abstract Forms (NIAF), and select report figures. The following historic structures were found and evaluated for eligibility in the National Register of Historic Places (NRHP) during the cultural surveys.

<u>NMCRIS No.: 139651 (see attached Cover Letter, NIAF, and FIG-4)</u> South Ditch (aka: Questa Citizens South Ditch, South Side Ditch, HCPI 44457/LA83968) Thunder Bridge (aka: Second River Crossing, HCPI 44458/CQTP-01)

NMCRIS 140384 (see attached Cover Letter, NIAF, FIG-2, and FIG-3) Elevated Trestle (aka: HCPI 44844) Lower Dump Sump (aka: HCPI 44845) North Ditch (aka: Embargo Ditch, Embargo Acequia, HCPI 44846) Acequia Del Molina (aka: Molina Ditch, HCPI 44847) Middle Ditch (aka: HCPI 44848)

Two of the historic structures found during the cultural surveys are considered eligible for inclusion in the NRHP. The two eligible structures are the South Ditch and the North Ditch (Embargo Ditch). All other historic structures found during the surveys are recommended at not eligible for inclusion in the NRHP as they fail to meet any of the Eligibility Criteria.

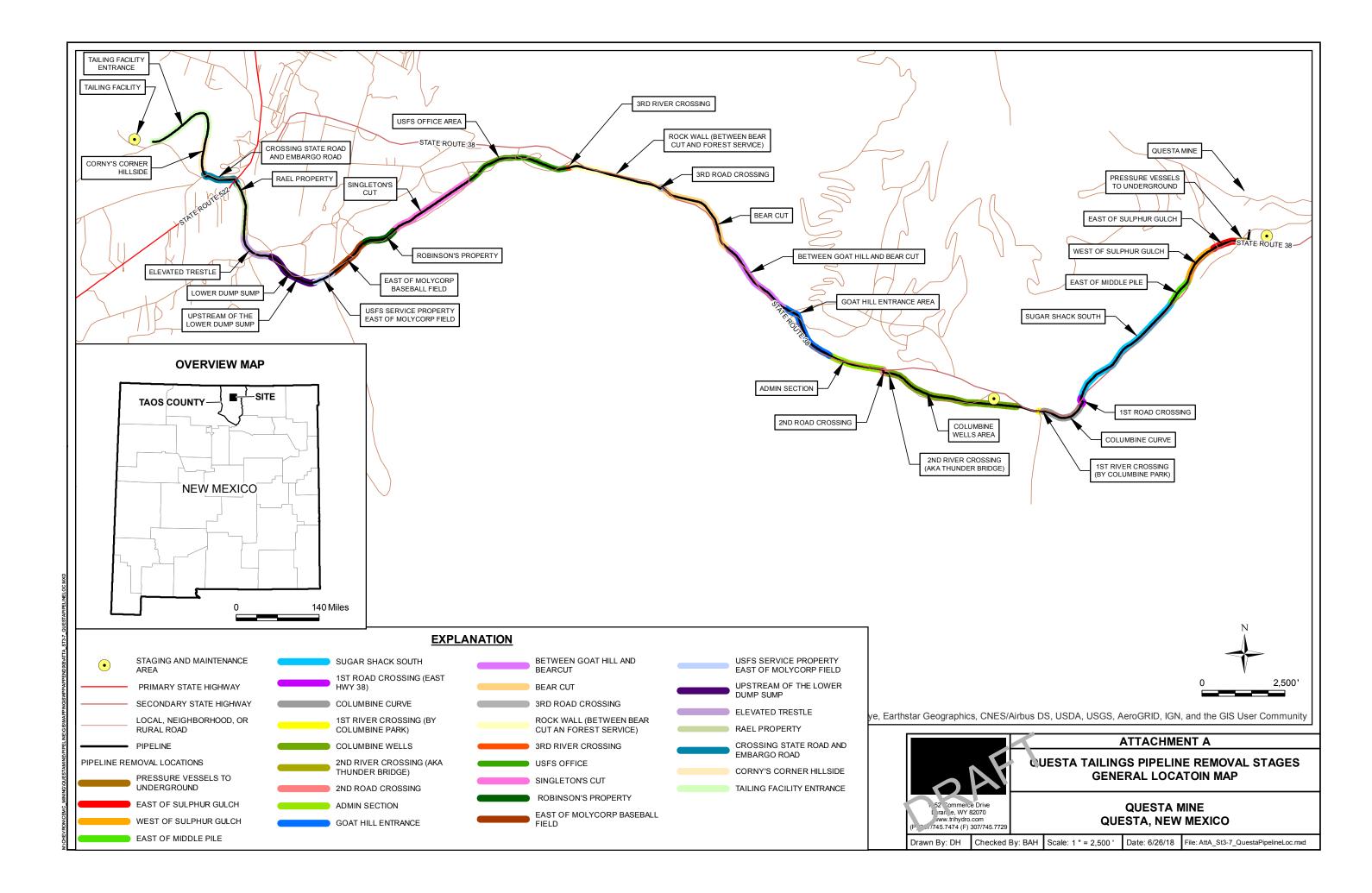
The South Ditch has been previously documented and evaluated as eligible for inclusion in the National Register of Historic Places. The extent of the South Ditch on Chevron property was documented in December 2017 and the effects of the project upon it evaluated (ARCADIS 2018a). Only non-significant portions of the ditch were potentially to be impacted by the Tailings Pipeline Removal project. A finding of No Adverse Effect on a Historic Property received concurrence from the New Mexico SHPO. The Forest Service did not indicate any adverse effects to the portion of the South Ditch on their property in their report to you.

The North Ditch (Embargo Ditch) was evaluated by Arcadis in May 2018 and has not been formally documented or evaluated for NRHP eligibility by the New Mexico SHPO. The North Ditch is primarily located on private lands with short portions located on NM Department of Highways lands were it crosses NM State Highway 38 and NM State Highway 522 in Questa. A portion of the North Ditch is in the Tailings Pipeline Removal project Area of Potential Effect (APE) where it parallels Lower Embargo Road and crosses underneath State Highway 522. The North Ditch is recommended as eligible for the

NRHP. The Chevron former tailing pipeline will be abandoned in place where it crosses the North Ditch. Therefore, the project will have No Adverse Effect on Historic Properties.

# 2.0 REFERENCES

- ARCADIS. 2018a. Chevron Questa Mine Tailings Pipeline Removal Project, Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 139651). January 12, 2018.
- ARCADIS. 2018b. Chevron Questa Mine Tailings Pipeline Removal Project, Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 140384). May 29, 2018.





Mr. Clinton Chisler Mining Act Reclamation Program Mining and Minerals Division Energy, Minerals, and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505

#### Subject:

Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 139651)

### Dear Mr. Chisler:

Enclosed please find our cultural resources inventory report for the Chevron Mining, Inc. (CMI) Questa Tailings Pipeline Removal Project in Taos County, New Mexico. The enclosed report covers four segments of Stage 2 that are located on CMI property (Above Lower Dump Sump, East of Molycorp Baseball Field, Singleton's Cut and Columbine Wells Area) and one segment on private property (Robinson's Property). One previously recorded historic ditch (Questa Citizens South Ditch/HCPI 44457/LA83968) is located within the Area of Effect (APE) of the project crossing through the Above Lower Dump Sump, East of Molycorp Baseball Field, Robinson Property, and Singleton's Cut segments. The Ditch has been determined to be eligible for the National Register of Historic Places (NRHP) by the New Mexico Historic Preservation Office (SHPO). Only non-contributing portions of the Ditch are located within the project APE and no further work is recommended. One newly recorded historic structure is located within the APE of the project segments. The Thunder Bridge (HCPI 44458) is located in Red River Canyon at the west end of the Columbine Wells Area segment. This structure has been evaluated as not eligible for inclusion in the NRHP as it meets none of the NRHP eligibility criteria. No further work is recommended. Nine historic isolated finds (IF #s 1-9) were also documented during this investigation, all of which are recommended as not eligible for the NRHP. The proposed project will therefore have No Adverse Effect on Historic Properties.

The report has been filed electronically with the New Mexico SHPO through the New Mexico Cultural Resources Information System (NMCRIS). A hard copy of this report has also been forwarded to Bob Estes, Staff Archaeologist at the New Mexico Historic Preservation Division, for concurrence with the recommendations of eligibility and effect. The SHPO will have up to 30 days to comment and/or

Environmental Business Consulting

Date: January 12, 2018

Contact: Dulaney Barclay

Phone: 720-344-3830

Email: dulaney.barclay@arcadis.co m

Our ref: B0046795.0075 Mr. Clinton Chisler January 12, 2018

concur with these findings. Please feel free to contact me if you have any questions or concerns.

Sincerely,

Dulaney Barclay Senior Archaeologist

Arcadis U.S., Inc.

Copies:

Bob Estes, New Mexico Historic Preservation Division, Santa Fe, NM

# NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS	2a. Lead Agency:	2b. Other Agency(ies):	3. Lead	3. Lead Agency Report No.:	
Activity No.: 139651	NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals Division				
4. Title of Report	:	1		5. Type of Report	
Chevron Questa	Failings Pipeline Cultural Resources I	nventory Stage 2 Sections B Thru D		Negative ,	
				✓ Positive	
Author(s)					
Dulaney Barclay					
6. Investigation	Гуре				
Research Desig	gn Archaeological Survey/Invent	ory Architectural Survey/Inventor	y 🗌 Test Exc	cavation Excavation	
Collections/Nor	n-Field Study Compliance Decision	on Based on Previous Inventory	Overview/Lit	Review Monitoring	
Ethnographic S	tudy Site/Property Specific Visit	Historic Structures Report	Other		
7. Description of	Undertaking (what does the project	ct entail?):		provide a constraint of the second	
	ne removal of a slurry pipeline that ex sed on inventory of the portion of the			-	

[ ] Continuation

8. Dates of Investigation: from: 12-Dec-2017	to: 13-Dec-2017	9. Report Date: 12-Jan-2018
10. Performing Agency/Consultant: ARCADIS	en dible en	1 (c)
Principal Investigator: Dulaney Barclay		
Field Supervisor: Dulaney Barclay		
Field Personnel Names:		
Historian / Other:		
11. Performing Agency/Consultant Report No.		
12. Applicable Cultural Resource Permit No(s)	:	×

13. Client/Customer (project proponent):

NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals D

С	0	n	ta	C	t:

Address:

Phone:

14. Client/Customer Project No.:

### 15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	j)	Acres Surveyed	Acres in APE
Private Corporation (see records for company name)		24.80	24.80
	TOTALS	24.80	24.80

### 16. Records Search(es):

Date(s) of HPD/ARMS File Review: November 30, 2017		Reviewer(s): ey Barclay	
Date(s) of Other Agency File Review: Name of Reviewer(s):			Agency:
17. Survey Data: a. Source Graphics [ ] NAD 27	7 [ X] NAD 83	Note: NAD 83 is the	NMCRIS standard.
✓ USGS 7.5' (1:24,000) topo ma ✓ GPS Unit Accuracy □<1.0 Other Source Graphic(s):	im ☑1-10m □10-100		☐ Aerial Photo(s) USGS Quad Code
b. USGS 7.5' Topographic Map Name Questa, NM			36105-F5
c. County(ies): TAOS			
d. Nearest City or Town: Questa	a, NM		
Township (N/S)	Range (E/W)	Section	
29N	12E	36	
29N	13E	31	
28N	13E	6	
28N	13E	5	
Projected legal description?	[]Yes []	X]No [	] Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

18. Survey Field Metho	ds:		
Intensity:	00% coverage	<pre>&lt;100% coverage</pre>	
Configuration: Dloc	k survey units	✓ linear survey units (I x w):	
other survey units (s	pecify):		
Scope: Inon-selectiv	ve (all sites/properties	s recorded) selective/thematic (selected site	es/properties recorded)
Coverage Method:	systematic pedestriar	n coverage	
other method (descri	ibe):		
Survey Interval (m): 15	Crew Size:	1 Fieldwork Dates: from: 12-Dec-2017	to: 13-Dec-2017
Survey Person Hours:	8.00 F	Recording Person Hours: 4.00 To	otal Hours: 12.00
Additional Narrative:			

[ ] Continuation

#### 19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Elevations vary from approximately 7400 to 7600 feet AMSL. Vegetation consists of an overstory of pine and juniper trees with understory of low shrubs, mixed forbs, cactus, and grasses. Soils consist of gravelly sandy loams derived from alluvium and colluvium. Project area is located in the Red River Canyon and on the gentle slopes at the base of the Taos Mountains, an extension of the Sangre DeCristo Range.

[ ] Continuation

20.a. Percent Ground Visibility:	b. Condition of Survey Area (grazed, bladed, undistributed, etc.):		
Ranges from 100 % on bladed road to 50% on slopes above pipeline; averages	Survey corridor was primarily along a bladed access road that runs parallel to the pipeline on norths side. Eroded along steep slopes		
70-80%.	on south side of pipeline. Pipeline parallels transmission line in places.		

[ ] Continuation

21. CULTURAL RESOURCE FINDINGS

Yes, see next report section

No, discuss why:

[ ] Continuation

22. Attachments (check all appropriate boxes):

[X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[ X] Copy of NMCRIS Map Check (required)

- [ ] LA Site Forms new sites (with sketch map & topographic map) if applicable
- [ ] LA Site Forms (update) previously recorded & un-relocated sites (first 2 pages minimum)
- [X] Historic Cultural Property Inventory Forms, if applicable

[ ] List and Description of Isolates, if applicable

[ X] Photographs and Log

[ ] Other Attachments (Describe):

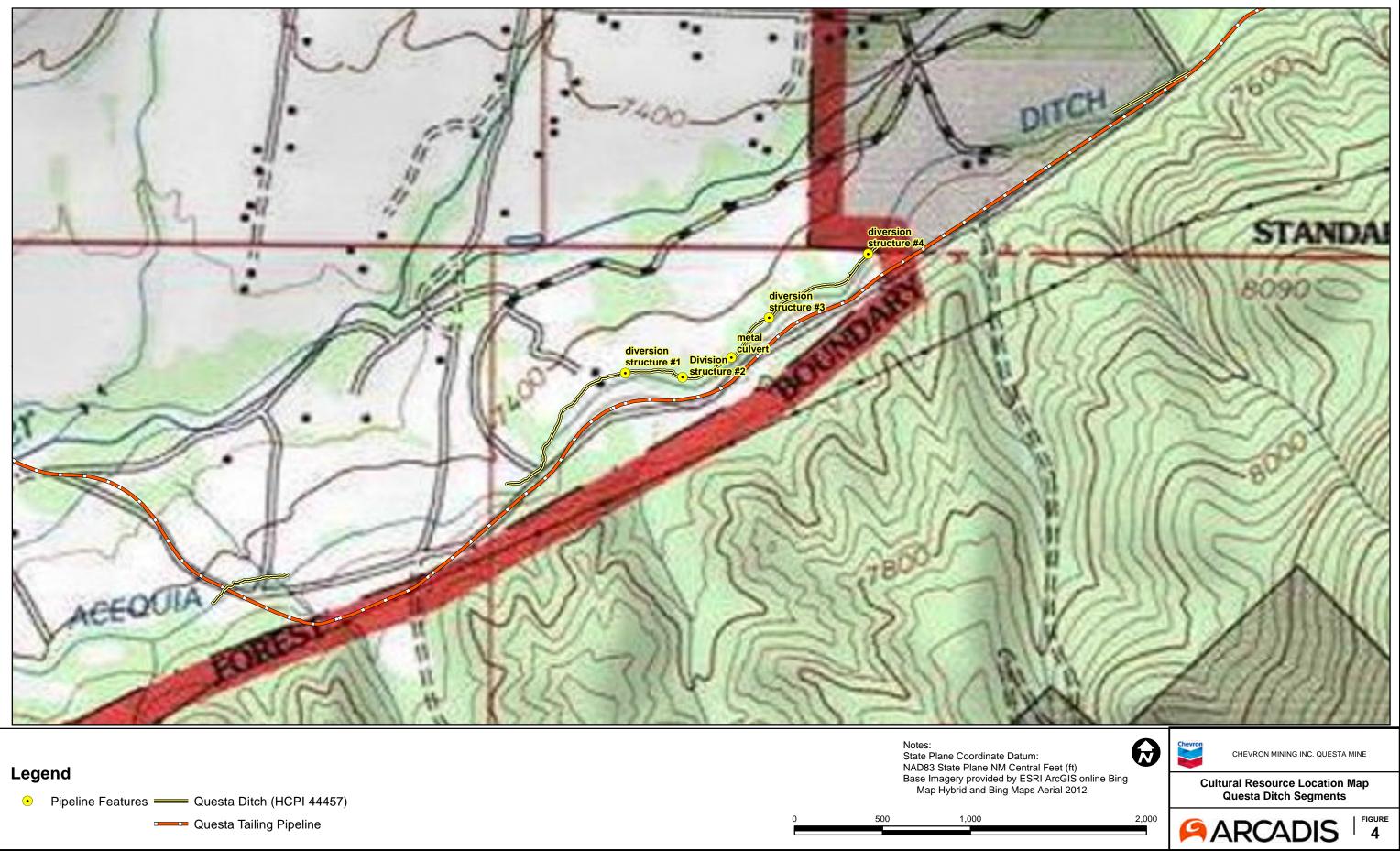
 24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

 Principal Investigator/Qualified Supervisor:
 Printed Name: Dulaney Barclay

Signature: Dulin Binchy Date: 1/12	118 Title: Principal Investigator
25. Reviewing Agency	26. SHPO
Reviewer's Name/Date:	Reviewer's Name/Date:
Accepted [ ] Rejected [ ]	HPD Log #: Date sent to ARMS:
CULTURAL RESOURCE	
[fill in appropriate section(s	)]
SURVEY RESULTS:	
Archaeological Sites discovered and registered: 0	
Archaeological Sites discovered and NOT registered: $\boldsymbol{0}$	8
Previously recorded archaeological sites revisited (site update f	orm required): 0
Previously recorded archaeological sites not relocated (site upd	ate form required): 0
TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0	
Total isolates recorded: 9	Non-selective isolate recording?
HCPI properties discovered and registered: 2	
HCPI properties discovered and NOT registered: 0	
Previously recorded HCPI properties revisited: 0	
Previously recorded HCPI properties not relocated: 0	
TOTAL HCPI PROPERTIES (visited & recorded, including acequi	as): 2
MANAGEMENT SUMMARY: Questa Citizens South Ditch (HCPI 44	457/LA83968) previously determined eligible for National Register.
Only non-contributing portions of the Questa Citizens South Ditch (H	ICPI 44457/LA83968) are within the Area of Potential Effect.
No adverse effects to Ditch from proposed project. No further work	is necessary.
Thunder Bridge (HCPI 44458) is recommended not eligible for Natio	nal Register. No further work is necessary.

### IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

NMCRIS No.:	139651		
LA/HCPI No. HCPI44457	Field/Agency No. LA83968	Eligible? (Y/N/U, applicable criteria) Y under Criteria A, C, and D per SHPO	
HCP144458	CQTP-01	Ν	
Previously reco	orded revisited sites/HCPI properties:		
LA/HCPI No. Field/Agency No.		Eligible? (Y/N/U, applicable criteria)	
	A NUMBER LOG (site form required)		· · · · · · · · · · · · · · · · · · ·
Sites Discovere	ed (site form required):	Previously recorded sites (site upda	ate form required):
LA No.	Field/Agency No.	LA No. Field/Agency No.	
Areas outside k	nown nearby site boundaries monitored?	[ ]Yes	[ ] No, Explain why:
TESTING & EXC	CAVATION LA NUMBER LOG (site form req	uired)	
Tested LA num	ber(s)	Excavated LA number(s)	
			8



0	500	1,000



Mr. Clinton Chisler Mining Act Reclamation Program Mining and Minerals Division Energy, Minerals, and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505

#### Subject:

Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 140384)

#### Dear Mr. Chisler:

Enclosed please find our cultural resources inventory report for the Chevron Mining, Inc. (CMI) Questa Tailings Pipeline Removal Project in Taos County, New Mexico. The enclosed report covers Stage 2 Section A and portions of Stages 3 thru 8 that are located on CMI property. Five historic structures including the Elevated Trestle (HCPI 44844), Lower Dump Sump (HCPI 44845), Embargo Ditch (HCPI 44846), Acequia Del Molina (HCPI 44847) and Middle Ditch (HCPI 44848) were found within the Area of Potential Effect. The Embargo Ditch (HCPI 448446) is recommended as eligible for the National Register of Historic Places (NRHP) under Criterion C of the National Register Eligibility Criteria. The Embargo Ditch will not be adversely affected as the Tailings Pipeline will be abandoned in place where it crosses the Ditch. The other historic structures are all recommended as not eligible for inclusion in the NRHP as they fail to meet any of the Eligibility Criteria. The proposed project will therefore have No Adverse Effect on Historic Properties.

A copy of this report will also be attached to a Pre-Construction Notification (PCN) for the US Army Corp of Engineers (USACE) to fulfill the conditions for use of Nationwide Permit (NWP) 12. A USACE permit is required as the pipeline crosses the Red River, a jurisdictional waterway, in four locations within the current inventory area. The Embargo Ditch, Acequia Del Molina Ditch, and Middle Ditch are also considered jurisdictional waterways of the United States as they draw water from, and return water to, the Red River. A USACE NWP 12 for utility line activities is required for them as well. The USACE will have 30 days to review the PCN and determine if it is complete.

The report has been filed electronically with the New Mexico SHPO through the New Mexico Cultural Resources Information System (NMCRIS). A hard copy of this report has also been forwarded to Bob Estes, Staff Archaeologist at the New

**Environmental Business Consulting** 

Date: May 29, 2018

Contact: Dulaney Barclay

Phone: 720-344-3830

Email: dulaney.barclay@arcadis.co m

Our ref: B0046795.0075 Mr. Clinton Chisler May 29, 2018

Mexico Historic Preservation Division, for concurrence with the recommendations of eligibility and effect. The SHPO will have up to 30 days to comment and/or concur with these findings. Please feel free to contact me if you have any questions or concerns.

Sincerely, Barely

Dulaney Barclay Senior Archaeologist

Arcadis U.S., Inc.

Copies:

Bob Estes, New Mexico Historic Preservation Division, Santa Fe, NM US Army Corp of Engineers, Albuquerque District, Albuquerque, NM

# NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 140384	<b>2a. Lead Agency:</b> NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals Division	2b. Other Agency(ies):	3. Lead	Agency Report No.:
4. Title of Report: Questa Tailings Pipeline Cultural Resources Inventory Stages 2 Thru 8, Taos County, New Mexico			xico	5. Type of Report
<b>Author(s)</b> Dulaney Barclay				✓ Positive
6. Investigation Typ	e			
Research Design	Archaeological Survey/Inventor	ry Architectural Survey/Inventory	Test Exc	avation Excavation
Collections/Non-Field Study Compliance Decision Based on Previous Inventory Overview/Lit Review Monitori				
Ethnographic Study Site/Property Specific Visit Historic Structures Report Other				
7. Description of Ur	dertaking (what does the project	entail?):		
Arcadis U.S., Inc conducted an inventory of approximately 2.6 miles of the Questa Tailings Pipeline that extends between the Questa Molybdenum Mine and the Tailings Facility.				

[ ] Continuation

8. Dates of Investigation: from: 05-Apr-2018	to: 16-May-2018	9. Report Date: 29-May-2018
10. Performing Agency/Consultant: ARCADIS		
Principal Investigator: Dulaney Barclay		
Field Supervisor: Dulaney Barclay		
Field Personnel Names:		
Historian / Other:		
11. Performing Agency/Consultant Report No.		
12. Applicable Cultural Resource Permit No(s)	):	

13. Client/Customer (project proponent):	
Chevron Mining Inc.	
Contact: Gabriel Herrera	
Address: PO Box 469, Questa, NM 87556	Phone: (575) 586-7571
14. Client/Customer Project No.:	
	Nieland 1

# 15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	A	Acres Surveyed Acres	
Chevron Mining Inc.	·····	32.90	32.90
	TOTALS	32.90	32.90

•

# 16. Records Search(es):

Date(s) of HPD/ARMS File Rev	iew: Name of F	Reviewer(s):	
12/8/2017; 3/5/2018; 3/6/20	18 Dulaney	Barclay	
Date(s) of Other Agency File R	eview: Name of F	Reviewer(s):	Agency:
	<b>_</b>		
17. Survey Data:			
a. Source Graphics [ ] NA	D 27 [ X ] NAD 83	Note: NAD 83 is the N	MCRIS standard.
<b>USGS</b> 7.5' (1:24,000) top	o map 🗌 Other topo map, So	cale:	
GPS Unit Accuracy Other Source Graphic(s):	<1.0m 1-10m 10-100r	n>100m	Aerial Photo(s)
b. USGS 7.5' Topographic N	lap Name		USGS Quad Code
Questa, NM			36105-F5
Red River, NM			36105-F4
c. County(ies): TAOS	7		
d. Nearest City or Town:			
e. Legal Description:			
		<b>•</b> "	
Township (N/S)	Range (E/W)	Section	
29N	13E	31	
28N	13E	6	
Projected legal description	? []Yes [)	(]No []	Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

Intensity:	✓ 100% cd	overage	<100% coverage				
Configuration:	block surve	y units	linear survey units (I x	w):			
other survey	units (specify)						
Scope: non	n-selective (all s	ites/properties re	corded) selective	/thematic (selected	I sites/properties	s recorded)	
Coverage Metho	od: 🗸 systema	atic pedestrian co	overage				
other metho	d (describe):						
Survey Interval	( <b>m):</b> 15	Crew Size: 2	Fieldwork Date	es: from: 05-Apr-20	018 to:	16-May-2018	
Survey Person I	Hours: 16.00	Rec	ording Person Hours	: 16.00	Total Hours:	32.00	,
Additional Narra	ative:						

[ ] Continuation

### 19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Project is situated in the Red River Valley of north-central New Mexico at elevation of 7400-7480 feet above mean sea level. It is located within a High Desert Shrub vegetative community and includes scrub pines, junipers, sagebrush, cactus, and scrub oak. Riparian areas along Red River have thick grasses, mixed forbs, cottonwood trees, and willows.

[ ] Continuation

20.a. Percent Ground Visibility:

b. Condition of Survey Area (grazed, bladed, undistributed, etc.):

Visibility ranges from 30% in riparian areas to 80% in open areas. Project area has been impacted by grazing and development including mine and residential development.

21. CULTURAL RESOURCE FINDINGS

✓ Yes, see next report section

[ ] Continuation

No, discuss why:

[ ] Continuation

22. Attachments (check all appropriate boxes):

[X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[X] Copy of NMCRIS Map Check (required)

[ ] LA Site Forms - new sites (with sketch map & topographic map) if applicable

[ ] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)

[X] Historic Cultural Property Inventory Forms, if applicable

[ ] List and Description of Isolates, if applicable

[ ] List and Description of Collections, if applicable

24. I certify the information provided above is correct and accurate and meets all applicable agency standards. Principal Investigator/Qualified Supervisor: Printed Name: Dulaney Barclay

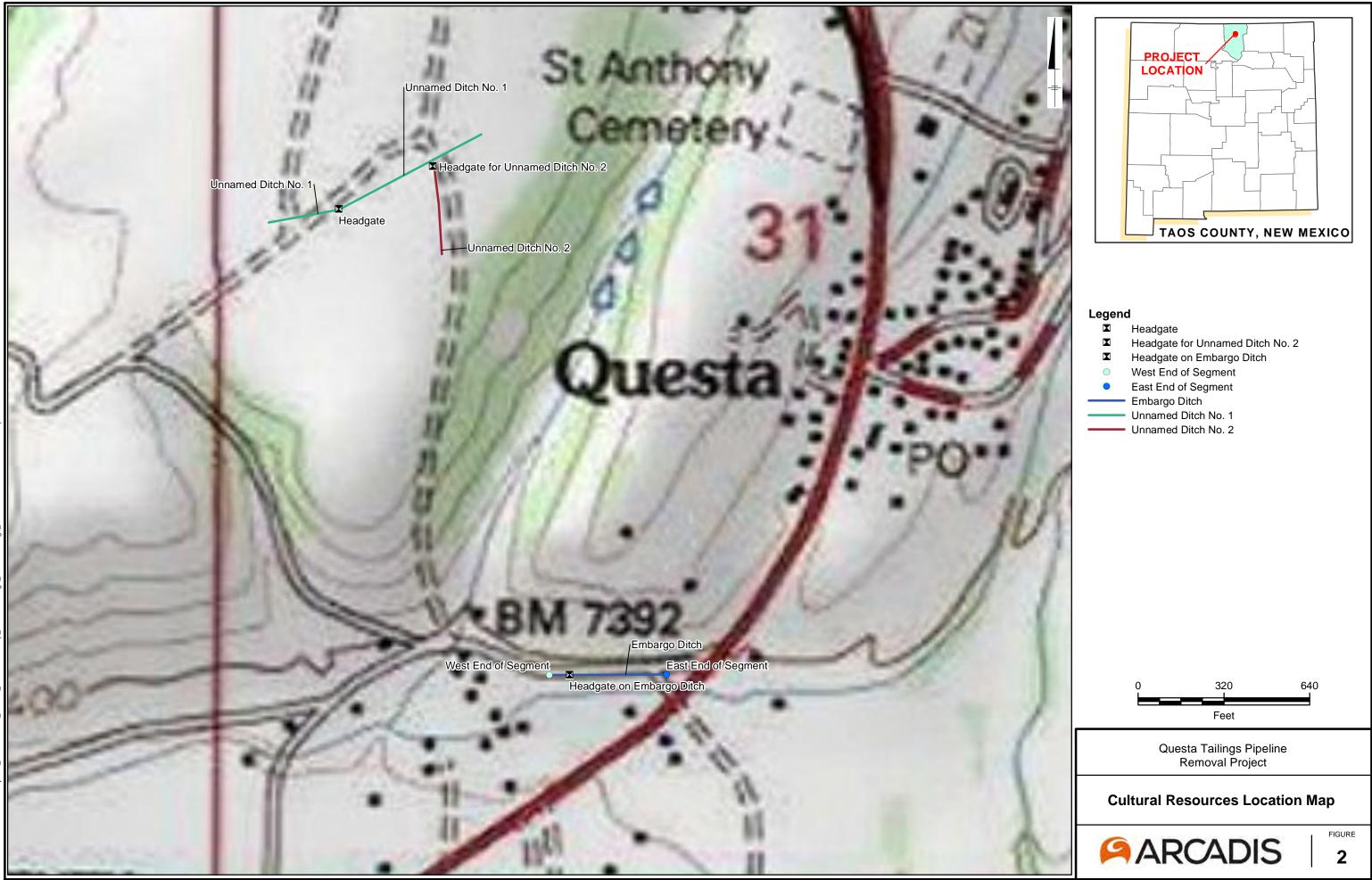
Signature: Duling Binchy Date: 5/20	1/18 Title: Principal Investigator
25. Reviewing Agency	26. SHPO
Reviewer's Name/Date:	Reviewer's Name/Date:
Accepted [ ] Rejected [ ]	HPD Log #: Date sent to ARMS:
CULTURAL RESOURCE	FINDINGS
[fill in appropriate section(s	)]
SURVEY RESULTS:	
Archaeological Sites discovered and registered: 0 Archaeological Sites discovered and NOT registered: 0 Previously recorded archaeological sites revisited (site update f	form required): 0
Previously recorded archaeological sites not relocated (site upd	
TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0	
Total isolates recorded: 0	Non-selective isolate recording?
HCPI properties discovered and registered: 5	
HCPI properties discovered and NOT registered: 0	
Previously recorded HCPI properties revisited: 0	
Previously recorded HCPI properties not relocated: 0	
TOTAL HCPI PROPERTIES (visited & recorded, including acequi	<b>as):</b> 5
MANAGEMENT SUMMARY: Five historic structures within Area of I	Potential Effect consisting of two structures associated with the

Tailings Pipeline and three historic ditches (acequias). Only one resources is evaluated as eligible for inclusion in the National Register. The Embargo Ditch (HCPI44846) is recommended eligible for the National Register under Criterion C as representative of middle to late 19th Century acequia in the Red River Valley. All other resources are recommended not eligible for the National Register.

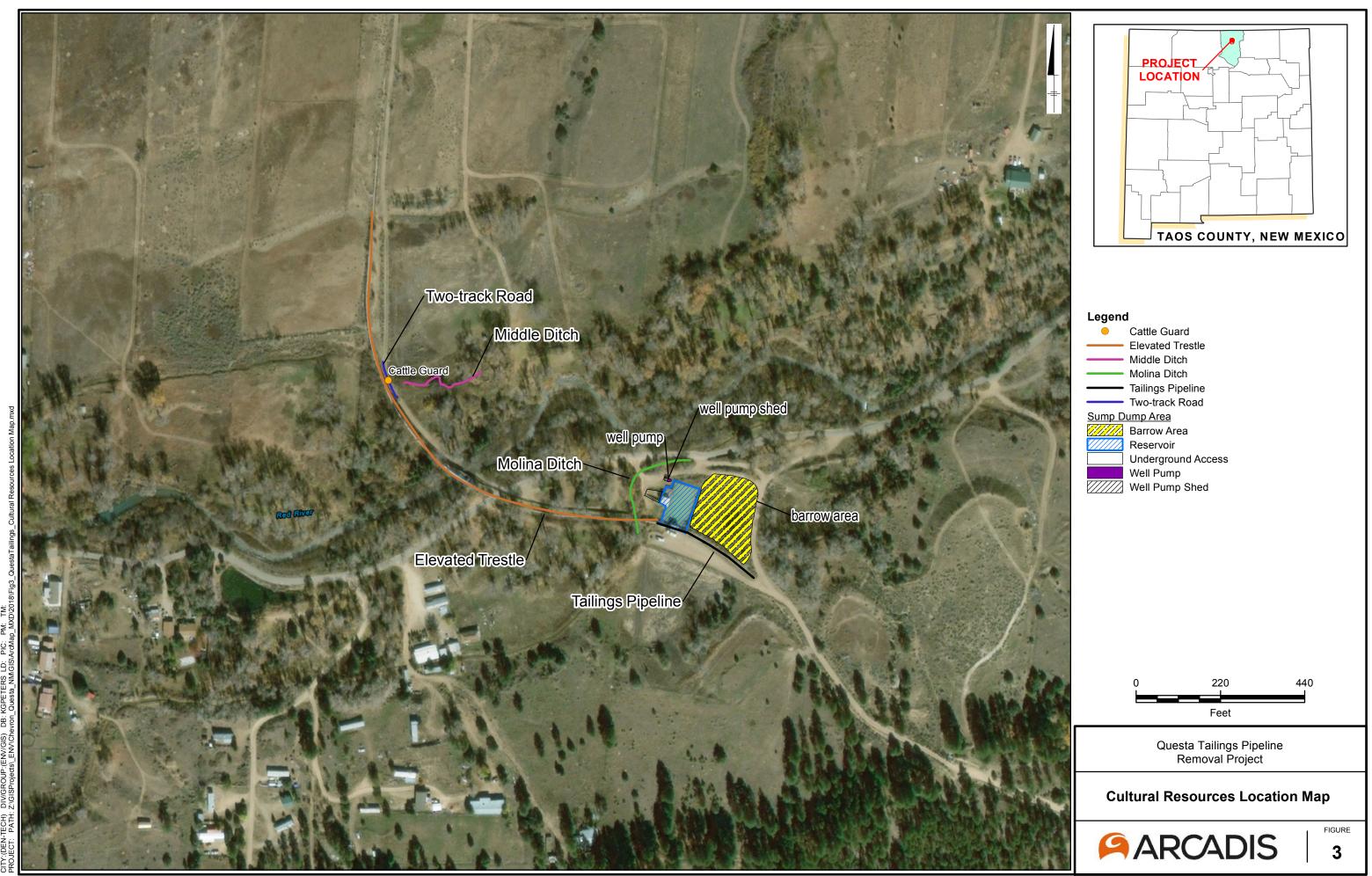
[ ] Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

NMCRIS No.:	140384			
HCPI44844		N		
HCPI44845		Ν		
HCP144846		Υ, Ο	Criterion C	
HCPI44847		Ν		
HCPI44848		Ν		
Previously reco	rded revisited sites/HCPI properties:			
LA/HCPI No.	Field/Agency No.	Eligible?	(Y/N/U, applicable crite	eria)
MONITORING L	A NUMBER LOG (site form required)			
Sites Discovere	d (site form required):	Previously reco	orded sites (site update	form required):
LA No. F	Field/Agency No.	LA No.	Field/Agency No.	
Areas outside k	nown nearby site boundaries monitored?	[ ] Yes		[ ] No, Explain why:
TESTING & EXC	AVATION LA NUMBER LOG (site form req	uired)		
Tested LA numb	per(s)	Excavated LA r	umber(s)	



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# DRAFT FOR REVIEW QUESTA TAILINGS PIPELINE REMOVAL PROJECT AQUATIC RESOURCE INVENTORY REPORT CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY QUESTA, NM

July 2, 2018

Project #: 476-027-003

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070

ENGINEERING SOLUTIONS. ADVANCING BUSINESS.

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# **1.0 INTRODUCTION**

On behalf of Chevron Environmental Management Company (CEMC), Trihydro Corporation (Trihydro) hereby submits this aquatic resource inventory report for the Questa Tailings Pipeline Removal Project to the United States Army Corps of Engineers (Corps). The Questa Mine is a former underground and open pit molybdenum mine and milling operation owned by Chevron Mining Inc. (CMI). The mine and mill facilities are located approximately 7 miles east of the Village of Questa, New Mexico (Questa), in Taos County along New Mexico Highway 38 and the adjacent Red River. The Questa Mine's Tailing Facility is located approximately 9 miles west of the mine, near Questa, NM. The tailings pipeline was constructed to transport mill tailings, as a slurry, to the tailings facility. Conventional underground mining operations began in 1918 and continued until 1958. Underground mining resumed in 1982 and continued through approximately 2012. Open pit mining was conducted between 1965 and 1983. CMI announced the cessation of operations at the mine on June 2, 2014 and initiated closeout activities.

In the 1960's, the Questa Mine constructed a pipeline from the Mill Area of the mine approximately 9 miles west to the Tailings Facility. From east to west, the pipeline typically consists of two 14-inch outside diameter, rubber lined steel pipes that parallel Highway 38 down the Red River Canyon, through the Village of Questa, to the Tailings Facility on the west side of town (Figure 1). In some areas, additional sections of pipeline were constructed to provide a backup line where access was limited. The pipe transitioned to HDPE at the Tailings Facility Flow Monitoring Building.

The Questa Mine stopped using the pipeline to transfer tailings in April of 2012, but continued to pump mine collected waters from the Mine Site groundwater collection systems and the underground mine to the Tailings Facility. The collected water likely flushed any remaining tailings from the pipeline, but some of the collected water may remain in low areas of the pipeline upon cessation of its use. The currently active pipeline was flushed with fresh water prior to cessation.

The pipeline crosses CMI property, United States Forest Service (USFS) property, New Mexico Department of Transportation (NMDOT) right of way (ROW), along with four private landowners' property. The pipeline crosses over the Red River at four locations and under Highway 38 at four locations. Most of the pipeline is above ground, running along Highway 38 or on CMI or USFS property. Some sections of the pipeline are buried and may either be abandoned in place or excavated and removed, depending on depth of burial and/or ease of access. There are structures along the route including three small pressure vessels, the Upper Dump Sump, the Lower Dump Sump and support buildings, three old bridges, two elevated trestles, and the Tailings Facility Flow Monitoring Building. For this report, bridges are defined as structures crossing streams, and are capable of carrying foot or vehicular traffic as well as pipe and other utilities. A trestle is an above ground structure designed for carrying pipe or other utilities only.

Trihydro

# 1.1 PURPOSE

The purpose of the Tailings Pipeline Removal Project is to remove the entire tailing pipelines from the Mill Area to the Tailings Facility Catchment Pond, or abandon the buried tailing pipeline in place where necessary. The work scope also includes demolition and removal of the three small pressure vessels, the Lower Dump Sump and support buildings, non-utility bearing bridges, the trestle, and the flow monitoring building.

The primary purpose of this report is to present the results of an aquatic resource inventory conducted on May 9 and 10, 2018 which is included as an appendix to the preconstruction notification (PCN) submitted to the U.S. Army Corps of Engineers (USACE).

The tailings pipeline parallels the Red River for about half of the 8.5-mile pipeline length, crossing the Red River at four locations. The Red River is a jurisdictional water of the U.S., requiring permitting through the USACE prior to beginning the regulated activity. The pipeline also crosses the Embargo Ditch and other irrigation ditches located near the Tailings Facility. The Embargo Ditch draws water from the Red River and returns water downstream to the Red River. In the State of New Mexico, irrigation ditches that draw water from a waters of the U.S. and return water to waters of the U.S. remain waters of the U.S. Therefore, the Embargo Ditch (and possibly other irrigation ditches in the area) are considered jurisdictional waters of the U.S. Wetlands associated with jurisdictional waters are waters of the U.S. and are also jurisdictional.

# 1.2 REGULATORY AUTHORITY

USACE Nationwide Permit NWP-12 applies to utility line activities. USACE concurred that NWP-12 should be applicable to the tailings pipeline removal effort. NWP-12 limits loss of wetlands to ½-acres of waters of the U.S. for each completed Project. USACE has indicated that the tailings pipeline removal Project, including the Lower Dump Sump, is considered to be a single and complete Project. NWP-12 requires PCN submittal. Section 11 of the PCN requires confirmation that all 32 of the NWP general conditions have been adequately addressed by the prospective permittee, including aquatic resources inventory, aquatic life movement and breeding, migratory bird breeding, bat roosting sites, and cultural resources.

# 1.3 PROJECT AREA DESCRIPTION

The Project Area is located in northern New Mexico on the west slope of the Sangre de Cristo Mountain Range in the Southern Rocky Mountains. The Project Area crosses west to east through four distinct ecoregions including the Taos



Plateau, Foothill Woodlands and Shrublands, Volcanic Mid-Elevation Forests and Shrublands, and Crystalline Mid-Elevation Forests and Shrublands (Griffith et al. 2006).

The western extent of the Project Area and tailing ponds area is located in the Taos Plateau, an ecoregion that is characterized by rolling to level plateau, some volcanic cones and the deep Rio Grande River gorge. Most streams within the Taos Plateau are ephemeral and intermittent. The geology of the area comprises Quaternary Eolian deposits, colluvium, piedmont and fan alluvium, and primarily Pliocene basalt and volcanic rocks. Soils comprise Aridisols and Alfisols. Vegetation is dominated by big sagebrush shrub lands with other shrubs, some grasses, and occasional piñon and juniper.

Upslope from the Taos Plateau is the Foothill Woodland and Shrublands ecoregion that consists of hills, ridges, and footslopes with moderate to high gradient perennial, intermittent, and ephemeral streams. The geology of the area is varied and includes Quaternary colluvium and alluvium deposits, sedimentary rock, and various volcanic formations. Soils include Alfisols, Inceptisols, and Entisols. Vegetation in this ecoregion is typically dominated by a combination of piñon and juniper woodlands, sagebrush, mountain mahogany stands, and Gambel oak woodlands. Varied foothill-mountain grasslands are interspersed with blue grama, prairie junegrass, or western wheatgrass.

Volcanic Mid-Elevation Forests and Shrublands occur higher in elevation than Foothill Woodland and Shrublands and are characterized by low mountain ridges, slopes, and outwash fans with moderate to high gradient perennial streams. Geology is similar to the Foothills and Woodlands and soils consist of Alfisols, Mollisols, and Inceptisols. Ponderosa pine forests dominate with understory species that may include Gambel oak, mountain mahogany, and other shrubs and grasses. At the higher elevations in this ecoregion, Douglas and white fir forests and small aspen stands may occur.

The eastern extent of the Project Area is in the Crystalline Mid-Elevation Forests and Shrublands which consists of similar physiography to the Volcanic Mid-Elevation Forests and Shrublands and similar geology though with more granitic rock. Soils comprise Alfisols, Inceptisols, and Entisols. Vegetation is similar to that found in the Volcanic Mid-Elevation Forests and Shrublands and is dominated by ponderosa pine at the lower elevations with a greater amount of Douglas and white fir, limber pine, and small aspen stands found at higher elevations.

### 1.3.1 SOILS

Eleven soil map units are crossed by the Project (NRCS 2017) with the two most prevalent being Cumulic Haploborolls, nearly level (14%) and Rock outcrop-badland complex, very steep (12%). Cumulic Haploborrolls, nearly level, are found in alluvial fans and valley sides. The parent material is alluvium derived from igneous and

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metamorphic rock. Soil is generally considered well drained and comprises loam and sandy clay loam. Rock outcropbandland complex, very steep, are found on mountain slopes with a typical profile consisting of bedrock. All soil units occurring within the 50-foot buffer area are presented in Table 1 and Figure 1.

### 1.3.2 VEGETATION

Vegetation communities vary across the Project Area and generally transition from sagebrush shrub-steppe dominated communities at the western extent of the tailings pipeline to higher elevation conifer forests at the eastern extend of the tailing pipeline. The primarily vegetation communities within the Project Area include sagebrush-steppe, ponderosa pine forest, riparian, and disturbed.

Sagebrush (*Artemisia tridentata*) shrub-steppe communities are dominated by sagebrush and rabbitbrush (*Ericameria nauseosa*), with a sparse understory of grasses and forbs. These communities may also include piñon and juniper associations. Portions of the soil surface may be covered with cryptogamic crusts. This is the predominant vegetation community along the western extent of the tailing pipeline.

Ponderosa pine forest occurs at elevations from the Lower Dump Sump (7,300 feet) to the east extent of the tailings pipeline at 8,100 feet. This vegetation community is dominated by mature ponderosa pine in open stands with an understory of shrubs and herbaceous cover. Dominant understory species include smooth brome (*Bromus inermis*), Rocky Mountain juniper (*Juniperus scopularum*), big sagebrush, rabbitbrush, Gambel oak (*Quercus gambellii*), skunkbush (*Rhus aromatica*), and Wood's rose (*Rosa woodsii*). White fir (*Abies concolor*), Englemann spruce (*Picea engelmannii*), and quaking aspen (*Populus tremuloides*) increase with elevation from west to east up the Red River Canyon.

Riparian areas are present along the Red River where it is intersected by the tailings pipeline. Riparian areas in the Project Area are dominated by woody species. Narrowleaf cottonwood (*Populus angustifolia*) is the dominant tree species in riparian areas with small trees and shrubs consisting of speckled alder (*Alnus incana*), river birch (*Betula occidentalis*), narrowleaf willow (*Salix exigua*), and Wood's rose. Grasses and forbs along the Red River include redtop (*Agrostis stolonifera*), smooth brome, and field horsetail (*Equisetum arvense*).

Disturbed areas are common along the pipeline route but primarily occur along the western extent of the tailings pipeline near the tailings ponds, at the lower dump sump, and generally along the roadsides. Vegetation comprises a variety of weedy plants with cheatgrass (*Bromus tectorum*), smooth brome, and Mexican fireweed (*Bassia scoparia*) common.



### 1.3.3 HYDROLOGY

The Project Area is located within Hydrologic Unit Code 13020101, the Upper Rio Grande Watershed, that begins at the Colorado/New Mexico border and drains an area of approximately 3,220 square miles (USGS 2010), including 94.79 percent of Taos County (USDA 2008). The Red River is the primary hydrologic feature in the Project Area. It is a perennial stream that originates in the Sangre de Cristo Mountains and forms a confluence with the Rio Grande River southwest of Questa. Numerous ephemeral streams designed as R4SBC (Riverine, intermittent, streambed, seasonally flooded) cross under the tailings pipeline and drain into the Red River. These ephemeral streams consist of steep, rocky drainages that flow during high precipitation events.

There are a number of man-made ditches that are crossed by the tailings pipeline including a drainage ditch that generally follows Moly Mine Rd from east to west and is designated as R5UBFx (Riverine, unknown perennial, unconsolidated bottom, semipermanently flooded, excavated). The Embargo Ditch, an Acequia, also crosses the tailings pipeline along the western portion of the Project. It is classified as R4SBCx (riverine, intermittent, streambed, seasonally flooded, excavated). The Embargo Ditch takes water from the Red River just west of the U.S. Forest Service building and apparently returns water approximately 1.5 miles downstream of Questa.



# 2.0 METHODS

# 2.1 DATA REVIEW

A review of available information relative to jurisdictional waters of the U.S. was performed in-house prior to visiting the Project Area. Potential wetlands were determined by overlaying the tailings pipeline (including a 50 foot-wide buffer) and all other areas of the Project over aerial photographs of the area, topographic maps, National Wetland Inventory (NWI) maps (USFWS 2017), and NRCS soil maps (NRCS 2017). In addition, previous environmental reports from the area were reviewed prior to conducting the onsite assessment.

# 2.2 AQUATIC RESOURCE DELINEATION METHODOLOGY

Trihydro conducted an onsite assessment of aquatic resources on May 9 and 10, 2018. Erik Schmude, a Trihydro biologist, led the onsite assessment. Methods used to delineate aquatic resources in the Project Area were based on a combination of desktop mapping using NWI data, photo documentation of all aquatic features crossed by the tailings pipeline, and onsite delineation of aquatic resources where Project impacts are expected (i.e. bridge crossings, Lower Dump Sump). These methods were discussed with the USACE prior to the onsite assessment.

According to NWI data, the Project Area intersects a number of aquatic resources including the Red River and adjacent wetlands, the Embargo Ditch, a number of unnamed ditches and ephemeral drainages classified as Intermittent Riverine, and isolated emergent wetlands associated with the Lower Dump Sump. Onsite determination of aquatic resource presence and boundaries were completed only in areas where impacts are expected at crossings of the Red River and at the Lower Dump Sump. However, every aquatic resource indicated in the NWI dataset was field checked and photographed.

For areas where impacts are expected, wetland determinations were completed using the Routine Determination protocol described in the *Corps of Engineers Wetland Delineation Manual* (USACE 1987). Wetland determination field methods followed the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valley, and Coasts* (USACE 2010) based on location and vegetation in the area (primarily ponderosa pine forest). Determinations of wetlands included an evaluation of plant species and percent cover by vegetation strata, digging of a soil pit to observe soil characteristics and presence of hydric soil indicators, and observations of hydrological indicators at the soil pit location. Wetland determination data forms were completed for each wetland and a paired upland observation point. For locations were no wetlands were found, a single upland point was evaluated and documented. If aquatic resources and their boundaries matched NWI data, no field delineation was completed, only

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verification of the presence of the aquatic resource. If NWI was found to be inaccurate, based on the field assessment, then the aquatic resource information and/or boundaries were updated for the segment of the pipeline (50 foot wide area) crossing the resource. Wetland determination points and any updated aquatic resource boundaries were recorded using a Trimble sub-meter accuracy global positioning system (GPS) and photographs were taken of each feature. A unique ID was given to each determination point. Photographs of additional aquatic resources, with no expected impacts, were also given unique IDs.

Wetlands were identified in the field as areas having positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation as indicated by greater than 50% OBL, FACW, or FAC species or less than or equal to 3.0 prevalence index. Aquatic resources were classified using the Cowardin system (Cowardin et al. 1979). Aquatic resources within the Project Area include Palustrine Emergent Wetlands (PEM), Palustrine Scrub-shrub (PSS), Palustrine Forested (PFO), and various River classifications streams, ditches, and other drainage features.

PEM wetlands are those aquatic features dominated by herbaceous emergent plants. Plant species commonly found in PEM wetlands in northern New Mexico include hydrophytic grasses, cattails (*Typha angustifolia*), sedges (*Carex* spp.), and rushes (*Juncus* spp.). PSS wetlands are those aquatic features dominated by shrubs under 20 feet tall or with trunks or stems less than 3 inches in diameter. Common PSS plant species found in this region include willow (*Salix* spp.), alder (*Alnus* spp.) and small cottonwoods (*Populus* spp.). PFO wetlands are dominated by trees greater than 20 feet high with stems greater than 3 inches in diameter. PFO wetland species composition commonly includes cottonwood, larger willows, and river birch (*Betula occidentalis*). Combinations of these communities may also be present in a wetland.



# 3.0 RESULTS

This section provides a discussion of the results of the onsite and desktop aquatic resource inventory including detailed information pertaining to each area where temporary impacts to aquatic resources are expected. Wildlife and cultural resource assessments required for the PCN are presented in section 3.1.2 and 3.2.

# 3.1 AQUATIC RESOURCE FINDINGS

Aquatic resources intersected by the Project Area include the Red River (4 crossings), 13 ephemeral streams, the Embargo ditch, 4 unnamed man-made ditches, 7 PSS wetlands, and 2 PFF wetlands, according to information gathered during the onsite assessment on May 9 and 10, 2018. The NWI data showed that Columbine Creek, an intermittent stream, was crossed by the Project. However, the onsite assessment indicated this stream intersects the Red River to the east of the NWI location and is not actually crossed by the Project. In addition, NWI data indicated the presence of two PEM wetlands in and adjacent to the Lower Dump Site; however, these areas were checked during the onsite delineation and no wetlands indicators were observed for each area.

A summary of aquatic resources intersected by the pipeline and 50 foot wide corridor are presented in Table 2 which includes a total of 0.31 acres of perennial riverine (R3RB1H, Red River), 0.33 acres of ephemeral streams (R4SBC), 0.41 acres of unnamed man-made ditches (R4SBAx and R5UBFx), 0.03 acres of the Embargo Ditch, 0.08 acres of PSS wetland, and 0.07 acres of PFO wetland. In total, this equates to 1.10 acres of riverine and 0.15 acres of wetlands present within the 50 pipeline corridor. These acreage calculations are based primarily on NWI data with slight modifications in areas of river crossings where onsite wetland assessments were completed on May 9 and 10, 2018. Figures 2 through 9 show all aquatic resources in the Project Area.

Temporary impacts to wetlands and waters will be limited to the 4 Red River bridge crossings and include temporary impacts to 0.12 acres of riverine areas and 0.03 acres of scrub-shrub wetland (Table 3). No impacts to the Embargo Ditch or any other irrigation ditches are expected to occur. Temporary impact acreage calculations are based on the onsite assessment and delineation of resource boundaries on May 9 and 10. No permanent impacts to wetlands or waters will occur. Figures 3, 4, 5 and 7 show areas where temporary impacts to aquatic resources area expected.

The results from each of the 10 field determination points are included in digital copies of Wetland Determination Data Forms in Appendix A. Photographs of each determination point as well as photographs of each of the ponds and streams, are provided in Appendix B. All aquatic resources including determination points, NWI data, field verified aquatic resource, and photo points are shown in Figures 3-9.

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# 3.1.1 AQUATIC RESOURCES IMPACTED BY PROJECT

As described in Section 2.0, onsite delineation of aquatic resources was completed in areas where temporary impacts associated with removal of the tailings pipeline may occur. Temporary impacts will include disturbance to aquatic resources resulting from vehicle and foot traffic and removal of concrete supports during pipeline removal. Five distinct areas were assessed. These areas include the crossing of potential wetlands at the Lower Dump Sump (according to NWI data) and four pipeline/bridge crossings of the Red River. A summary of findings for each of these areas is presented below.

#### 3.1.1.1 LOWER DUMP SUMP

According to NWI data, there are two PEM wetlands present at the Lower Dump Sump including one onsite and one offsite, where impacts may occur. Determination points (Q-1 and Q-2) were placed in each of the potential wetlands. No wetland indicators were observed at either location indicating that wetlands are absent from this area (Figure 4). Vegetation, soils, and hydrology were found to be highly disturbed at both locations. Both areas are within man-made, bermed depressions constructed to contain tailings materials. Vegetation in both areas was sparse and inhabited by weedy plant species common associated with disturbed areas including Mexican fireweed, cheatgrass, and hairy golden aster (*Heterotheca villosa*). Soils showed no sign of hydric indicators.

# 3.1.1.2 RED RIVER CROSSING (ELEVATED TRESTLE)

The tailings pipeline crosses the Red River, on an elevated trestle, from 36°41'41.97"N, 105°35'45.20"W to 36°41'45.07"N, 105°35'48.90"W. From the east, this is the 4th crossing of the Red River as shown in Figure 3. The pipeline is suspended above the river by an elevated steel trestle (Photo 9 and Photo 10 of Appendix B). The river is approximately 26 feet wide at the crossing. Pipeline removal would involve removal of concrete supports located at the east and west bank of the river, within the river channel. NWI data indicates that a small amount of PFO wetland occurs approximately 20 feet to the south of the pipeline on both the east and west side of the river.

Two determination points were assessed at this location including Q-3a placed 20 feet and Q-3b placed approximately 100 feet from the edge of the ordinary high-water mark (OHWM) of the river. No wetlands were documented within the 50-foot wide pipeline buffer based on a lack of two or more wetland indicators.

Hydrophytic vegetation was present at Q-3a (primarily water birch); however, no hydrology indicators were observed and hydric soil indicators were weak with no depleted matrix. No wetland indicators were observed at Q-3b; however, hydric soil indicators were lacking at both locations. As is indicated by the NWI data, wetlands are absent beneath the pipeline trestle. The NWI data does indicate that wetland is present just inside the 50-foot buffer, along the south end. However, no wetland was documented in this area based on conditions observed at the determination points and an



assessment of onsite conditions. Only riverine would be affected within the 50-foot buffer. The river boundary indicated by NWI was found to be accurate (Figure 3).

# 3.1.1.3 RED RIVER CROSSING (EAST OF RANGER STATION)

The tailings pipeline crosses the Red River at approximately 36°42'6.96"N, 105°34'47.96"W east of the ranger station. From the east, this is the 3<sup>rd</sup> crossing of the Red River as shown in Figure 5. The pipeline is suspended above the river by a steel bridge (Photo 20a and 20b of Appendix B). The river is approximately 21 feet wide at the crossing. Pipeline removal would involve removal of concrete supports located at the east and west bank of the river, outside of the river channel.

NWI data indicates that no wetlands occur on either side of the riverine area. Two determination points were assessed at this location including Q-4a placed on the west side of the river and Q-4b placed on the east side of the river. Q-4b was placed in an area just outside of the apparent riparian area. No wetland indicators were observed. Vegetation was dominated by Rocky Mountain juniper. Vegetation has been removed in the 50-foot buffer on the both banks, on the south side of the pipeline. In this area, the river bank consists of river rock and concrete.

Determination point Q-4a was placed within the riparian area, at a low spot along the west band of the river. Hydrophytic vegetation was present with water birch the dominant woody plant. However, hydric soil and hydrology indicators were not met at this location. Some redoximorphic features were observed; however, the soil matrix was not depleted enough to be considered a wetland soil.

NWI was correct in that no wetlands are present, at this crossing. The exact location of the riverine area was found to be inaccurate by approximately 40 feet. The actual boundary of the riverine area was delineated and is shown on Figure 5.

#### 3.1.1.4 RED RIVER CROSSING (THUNDER BRIDGE)

The tailings pipeline crosses the Red River at approximately 36°41'4.29"N, 105°31'47.83"W. From the east, this is the 2<sup>nd</sup> crossing of the Red River as shown in Figure 7. This is known at the Thunder Bridge crossing. The river is approximately 25 feet wide at the crossing. The pipeline is suspended above the river by a wide steel bridge with wooden planks on top (Photo 21, 21a, and 21b of Appendix B). Pipeline removal would involve removal of the concrete supports located at the east and west bank of the river.

NWI indicates that the 50-foot pipeline corridor intersects a small amount of palustrine forested wetland and palustrine scrub-shrub wetland to the east and north of the crossing and palustrine scrub-shrub wetland to the west and south of the crossing. Two determination points were assessed at this location, one on the west side of the crossing and one on

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the east side of the crossing. The exact location of the riverine area was found to be inaccurate and was delineated in the field. The area to the east of the river sloped steeply into an upland area. No hydric soil or hydrology indicators were observed at point Q-5b. However, hydrophytic vegetation was observed as evidenced by 80 percent FAC and FACW species with narrowleaf cottonwood, speckled alder and Bebb's willow (*Salix bebbiana*) the dominant woody plants in the riparian zone.

All three wetland indicators were observed at point Q-5a, on the west side of the river. Hydric soil indicators observed include 30 percent redox concentrations in pore linings in a depleted matrix (10YR 4/2). In addition, hydrology indicators were observed including saturation (6" below ground surface), algal mat, iron deposits, water-stained leaves, and drainages patterns. All dominant plant species were FAC, FACW, or OBL species with water birch and willows dominating the shrub stratum. The boundary the PSS wetland as indicated by NWI data was found to be slightly inaccurate and was delineated in the field (Figure 7), within the 50-foot pipeline buffer. The NWI data was correct in classifying the wetland to the west of the river crossing as a PSS wetland.

# 3.1.1.5 1<sup>ST</sup> RED RIVER CROSSING (BY COLUMBINE PARK)

The tailings pipeline crosses the Red River at approximately 36°40'53.33"N, 105°30'53.97"W by Columbine Park. From the east, this is the 1<sup>st</sup> crossing of the Red River as shown in Figure 7. The pipeline is suspended above the river by a steel bridge (Photo 22a and 22b of Appendix B). The river is approximately 26 feet wide at the crossing. Pipeline removal would involve removal of concrete supports located at the east and west bank of the river. NWI data indicates that no wetlands occur on either side of the riverine area. Two determination points were assessed at this location including Q-6a placed 5 feet and Q-6b placed approximately 15 feet from the edge of the ordinary high water mark (OHWM) of the river. Hydrophytic vegetation was present at both locations; however, hydric soil indicators were lacking at both locations. Therefore, NWI was correct in that no wetland is present, adjacent to the Red River, at this crossing. The exact location of the riverine area was found to be inaccurate by approximately 75 feet. The actual boundary of the riverine area was delineated and is shown on Figure 7. Narrowleaf cottonwood is the dominant woody species along the riparian area with sparse shrubs, grasses, and forbs in the understory. Sphagnum moss was observed in an area within 5 or 6 feet of the riverine area.

# 3.1.2 TERRESTRIAL AND AQUATIC WILDLIFE

During the onsite aquatic resource assessment, a cursory wildlife survey was conducted to identify any potential terrestrial or wildlife issues for the Project. This included documentation of any raptor or migratory bird nests, bat roosts, endangered species, aquatic life movements, or fish spawning areas potentially impacted by the Project. In addition, potential presence of threatened or endangered (T&E) species was assessed for the Project Area.



An official species list was provided by the USFWS New Mexico Ecological Services Field Office and indicates a total of five T&E species may be present in the area of the Project (Appendix C). T&E species on the list include Canada lynx (*Lynx Canadensis*), New Mexico meadow jumping mouse (*Zapus hudsonius luteus*), Mexican spotted owl (*Strix occidentalis lucida*), Southwestern willow flycatcher (*Empidonax traillii extimus*), and yellow-billed cuckoo (*Coccyzus americanus*). There are no Critical Habitats within the Project Area. The New Mexico meadow jumping mouse and southwestern willow flycatcher are also designated as endangered by NMGF. All federal T&E species are considered rare for Taos county and there are no documented occurrences in or near the Project Area. Although riparian and wetland habitat is available, the closest occurrence of New Mexico jumping mouse is an individual trapped at Taos Ski Valley in 1966 (BISON-M 2017). None of these species are expected to occupy habitats affected by the Project.

Wildlife species observed during the survey included a variety of mammals and birds. Mammals in the area included big horn sheep (*Ovis Canadensis*), Abert's squirrel (*Sciurus aberti*), cottontail (*Sylvilagus* sp.), sign of elk (*Cervus elaphus*) and mule deer (*Odocoileus hemionus*), and sign of roosting bats (*Vespertilionidae*). Birds observed included a northern goshawk (*Accipiter gentilis*), western meadowlarks (*Sturnella neglecta*), spotted towhees (*Pipilo maculatus*), northern flickers (*Colaptes auratus*), bushtits (*Psaltriparus minimus*), barn swallows (*Hirundo rustica*), violet-green swallows (Tachycineta thalassina), Canada geese (Branta canadensis), mallard ducks (Anus platyrhyncos), a western tanager (*Piranga ludoviciana*), yellow-rumped warblers (*Setophaga coronate*), dark-eyed juncos (*Junco hyemalis*), house finches (*Haemorhous mexicanus*), American robins (*Turdus migratorius*), American crows (*Corvus brachyrhynchos*), and turkey vultures (*Cathares aura*). No raptor nests were observed in the area. Two unoccupied migratory bird nests were observed; a northern flicker cavity nest near the Embargo Ditch, and a cup nest built by an unknown species, beneath the bridge at the river crossing east of the Ranger Station.

Bridge crossings were checked for potential bat roost sites. With the exception of Thunder Bridge (2<sup>nd</sup> Red River Crossing) no suitable roosting habitat was observed at the bridges. The Thunder Bridge has a number of microhabitat features which could be used by bats; however, no signs of bat use were observed. An acoustic bat monitor was used during the day to check for ultrasonic vocalizations beneath the bridge. No bat vocalizations were recorded. A bat night roost was observed inside a large concrete culvert adjacent to the tailings pipeline (Photo 26 of Appendix B). This culvert crosses below Highway 38. Bat droppings were prevalent in the culvert indicating this is a commonly used roost site during the summer months. Suitable day roost or hibernacula habitat was not observed at this site. The culvert will not be removed during pipeline removal.

A number of game fish occur in the section of the Red River crossed by the pipeline. These game fish include triploid (sterile) rainbow trout (*Oncorhychus mykiss*), raised in a hatchery downstream of the Project Area, and an introduced, wild brown trout (*Salmo trutta*) population. Stream substrate at the river crossing consisted of primarily cobbles.

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Spawning areas (i.e. gravel beds) were not observed in areas where concrete structures are to be removed from the stream.

# 3.1.3 OTHER WETLANDS ASSESSMENT

CEMC contracted with URS Corporation (URS) (URS 2013 and 2014) to assess wetlands in locations near the pipeline removal corridor shown on Figures 1 through 9 of this report. The areas delineated by URS were outside of the scope of this ARI report. Copies of the URS reports are presented in Appendix D. Wetlands were determined to be present outside of the pipeline removal corridor, between the west and east ends of the Questa Tailings Pipeline Removal Project (Figure 1). The pipeline removal project will not impact the wetlands delineated by URS.

#### 3.2 CULTURAL RESOURCES

CEMC contracted with Arcadis to evaluate irrigation ditches within the pipeline removal corridor as potential historic resources and to evaluate if the pipeline removal activities will impact historic ditches. Arcadis submitted two reports (Arcadis 2018a and 2018b) to the New Mexico Minerals and Mining Division (MMD) and the New Mexico Historic Preservation Division (HPD). A summary of the findings as reported in personal communications is presented in Appendix E. Future work plans submitted to MMD and EPA will propose grouting pipeline segments in place if those areas determine to present high risk of impacts to historic irrigation ditches.



# 4.0 CONCLUSIONS

In total, aquatic resources intersected by the Project Area include the Red River (4 crossings), 13 ephemeral streams, the Embargo ditch (aka-North Ditch), 4 unnamed man-made ditches, 7 PSS wetlands, and 2 PFF wetlands. Total acres of aquatic resources in the Project Area include 0.31 acres of perennial riverine (R3RB1H, Red River), 0.33 acres of ephemeral streams (R4SBC), 0.41 acres of unnamed man-made ditches (R4SBAx and R5UBFx), 0.03 acres of the Embargo Ditch, 0.08 acres of PSS wetland, and 0.07 acres of PFO wetland. These acreage calculations are based primarily on NWI data with slight modifications in areas of river crossing where onsite wetland assessments were completed. In total, this equates to 1.10 acres of riverine and 0.15 acres of wetlands present within the 50-foot pipeline corridor.

Temporary impacts to wetlands and waters are limited to the 4 Red River bridge crossings and include temporary impacts to 0.12 acres of riverine areas and 0.03 acres of scrub-shrub wetland. No impacts to the Embargo Ditch or any other irrigation ditches are expected to occur. Temporary impact acreage calculations are based on the onsite assessment and delineation of resource boundaries on May 9 and 10, 2018. No permanent impacts to wetlands or waters will occur.

No raptor nests were observed in the area, during the onsite assessment. Two migratory bird nests were found; however, both were unoccupied. Therefore, no direct impacts to breeding birds are expected. An onsite assessment of the bridge crossings indicated that there are no roosting bats in these areas. A bat night roost was identified in a large concrete culvert at Photo Point 26 of Appendix B. This point is where a large number of bat droppings were observed. This culvert will not be removed and because pipeline removal will be short-lived and completed during the daytime. No significant impacts to bats are expected. No fish spawning areas were observed at the pipeline crossing of the Red River. No adverse impacts to aquatic species movements are anticipated during removal of the pipeline because the project will be short-lived. In addition, the stream will not be blocked during pipeline removal and aquatic species will be able to move up and down stream.



# 5.0 REFERENCES

- Arcadis. 2018a. Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 139651). January 12, 2018
- Arcadis. 2018b. Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 140384). May 29, 2018.
- Arcadis. 2018c. Questa Tailings Pipeline Removal. May 18, 2018. Available e-mail: confidential.
- Arcadis. 2018d. Questa Tailings Pipeline Removal. May 25, 2018. Available e-mail: confidential.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C. Publ. No. FWS/OBS-79/31. 107 p.
- Griffith, G.E., Omernik, J.M., McGraw, M.M., Jacobi, G.Z., Canavan, C.M., Schrader, T.S., Mercer, D., Hill, R., and B.C. Moran. 2006. Ecoregions of New Mexico (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,400,000).
- URS Corporation (URS). 2013. Questa Removal Action Wetland Assessment Report, Revision 1. June 28, 2013.
- URS. 2014. Historic Tailing Spills Removal Action Completion Report, Chevron Questa Mine Superfund Site, Revision 1, Appendix C, Lower Dump Sump Wetland Delineation Report. September 26, 2014.
- U.S. Army Corps of Engineers (Corps). 1987. Corps of Engineers Wetlands Delineation Manual, Wetlands Research Program Technical Report Y-87-1. Final Report - January 1987.
- U.S. Army Corps of Engineers (Corps). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valley, and Coast Region (Version 2.0). U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.
- United States Department of Agriculture (USDA). 2008. Upper Rio Grande Watershed Hydrologic Unit Code 13020101 Rapid Assessment. Natural Resources Conservation Service, Lakewood, Co.

Trihydro

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 2017. Soil Survey of Taos County and Parts of Rio Arriba and Mora Counties, New Mexico. <u>https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</u>.
- U.S. Department of the Interior Fish and Wildlife Service (FWS). 2017. National Wetlands Inventory. Wetlands Mapper. <u>http://wetlands.fws.gov/</u>.



TABLES



Soil Code	Soil Map Unit Name	Square Feet	Acres
CUB	Cumulic Haplaquolls, nearly level	232,160.24	5.33
СҮВ	Cumulic Haploborolls, nearly level	629,025.73	14.44
FeC	Fernando clay loam, 3 to 5 percent slopes	75,972.85	1.74
FLB	Fluvents, nearly level	38,939.44	0.89
LoB	Loveland clay loam, 0 to 3 percent slopes	22,273.01	0.51
RdG	Rock outcrop-Badland complex, very steep	505,220.28	11.60
RUG	Rock outcrop-Ustorthents complex, very steep	279,100.10	6.41
SED	Sedillo-Silva association, strongly sloping	177,506.59	4.08
SmB	Silva loam, 0 to 2 percent slopes	65,450.85	1.50
TeB	Tenorio loam, 0 to 3 percent slopes	13,264.50	0.30
TeC	Tenorio loam, 1 to 5 percent slopes	202,163.02	4.64

# TABLE 1. SOIL MAP UMITS IN THE PROJECT AREA

This summary is for the 50' Wetland Inventory Area, ending at the west end of the pipeline removal project.

TABLE 2. AQUATIC RESOURCES WITHIN THE PROJE	ECT AREA *
---	------------

Cowardin Code	Number of Features	Wetland Type	Acres	Notes
PFO1A	2	Freshwater Forested Wetland	0.07	
PSS1C	7	Freshwater Scrub-shrub Wetland	0.08	
		Riverine - Upper Perennial Stream with		
R3RB1H	6	Rock Bottom	0.31	Red River
		Riverine - Intermittent Stream with		
		Streambed, Temporarily Flooded,		
R4SBAx	1	Excavated	0.02	Ditch
		Riverine - Intermittent Stream with Primarily st		Primarily steep
R4SBC	14	Streambed, Seasonally Flooded	0.33	ephemeral streams
		Riverine - Intermittent Stream with		
		Streambed, Temporarily Flooded,		
R4SBCx	1	Excavated	0.03	Embargo Ditch
		Riverine - Intermittent Stream with		
R4SBJ	1	Streambed, Intermittently Flooded	0.03	
		Riverine - Unknown Perennial,		
R5UBFx	6	Unconsolidated Bottom, Excavated	0.39	

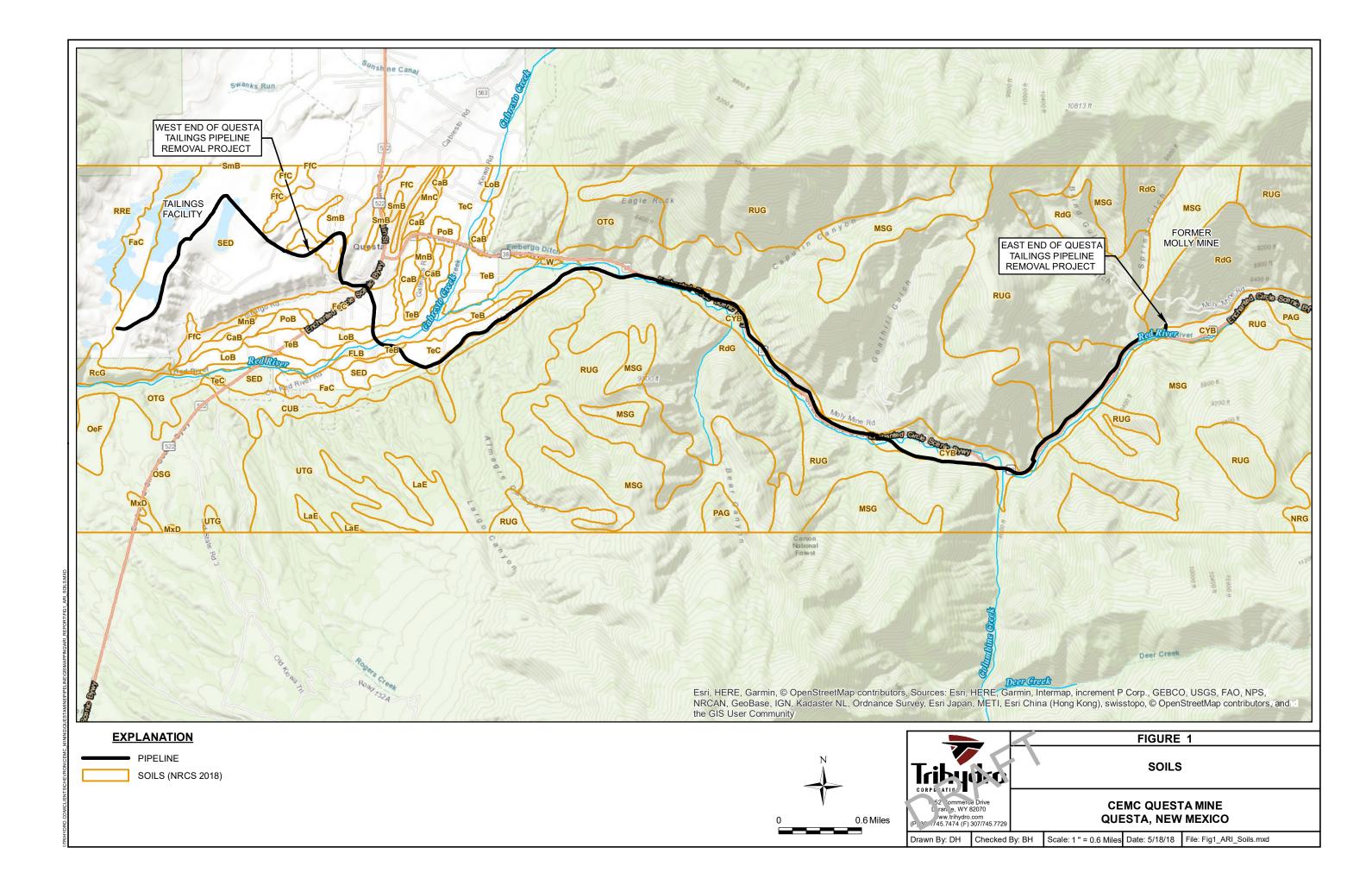
\* Project Area = pipeline buffered by 50 feet

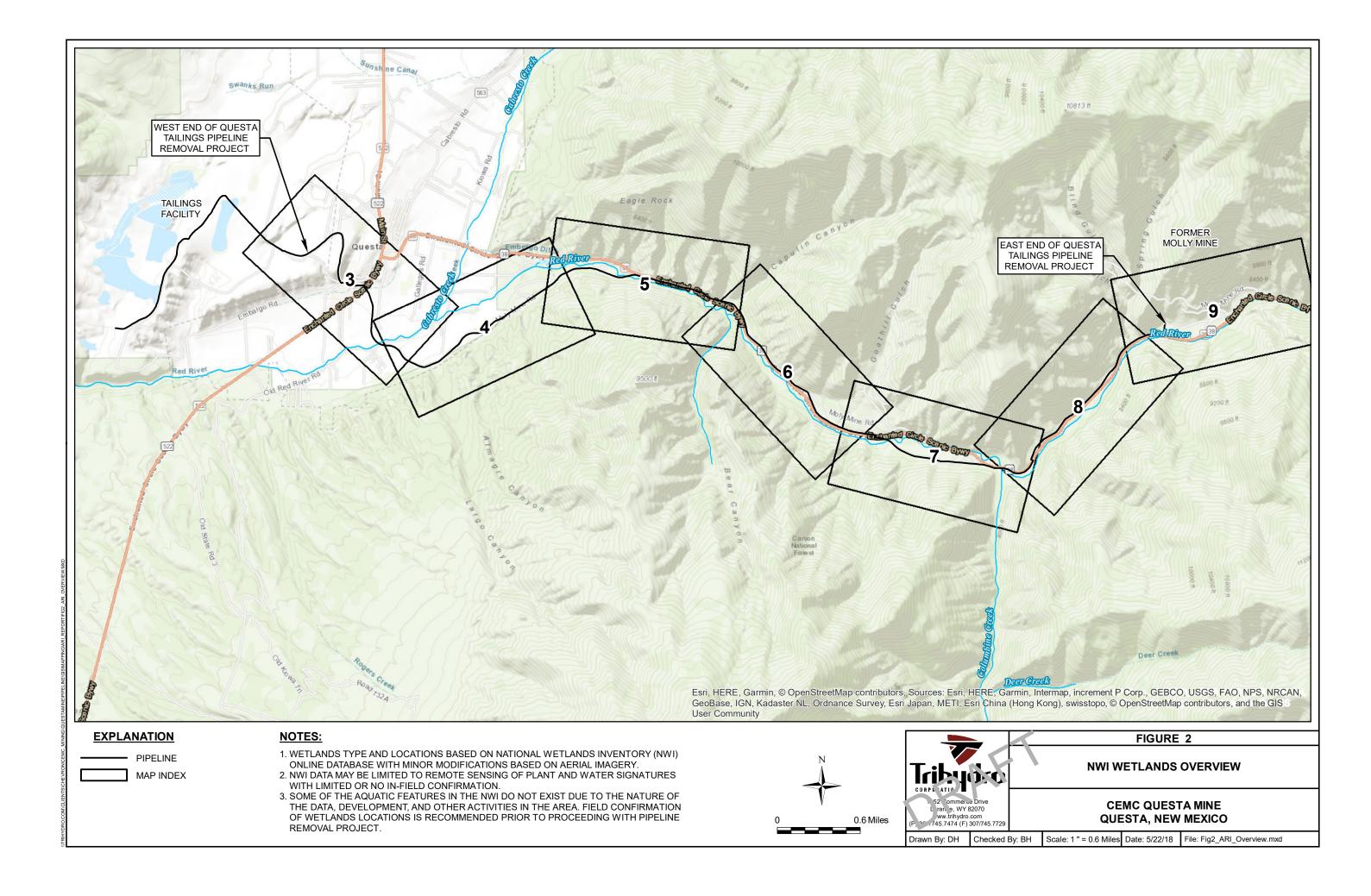
COWARDIN CODE	RESOURCE TYPE	ACRES	NOTES
	Riverine - Upper Perennial Stream		
R3RB1H	with Rock Bottom	0.03	Red River crossing 1 (by Columbine Park)
	Riverine - Upper Perennial Stream		
R3RB1H	with Rock Bottom	0.03	Red River crossing 2 (Thunder Bridge crossing)
	Riverine - Upper Perennial Stream		
R3RB1H	with Rock Bottom	0.03	Red River Crossing 3 (east of ranger station)
	Riverine - Upper Perennial Stream		
R3RB1H	with Rock Bottom	0.03	Red River Crossing 4 (elevated trestle bridge)
	PSS1C - Freshwater Scrub-shrub		
PSS1C	Wetland	0.03	Red River Crossing 3 (east of ranger station)
	•	•	
-	TOTAL Riverine	0.12	
-	FOTAL Wetland	0.03	

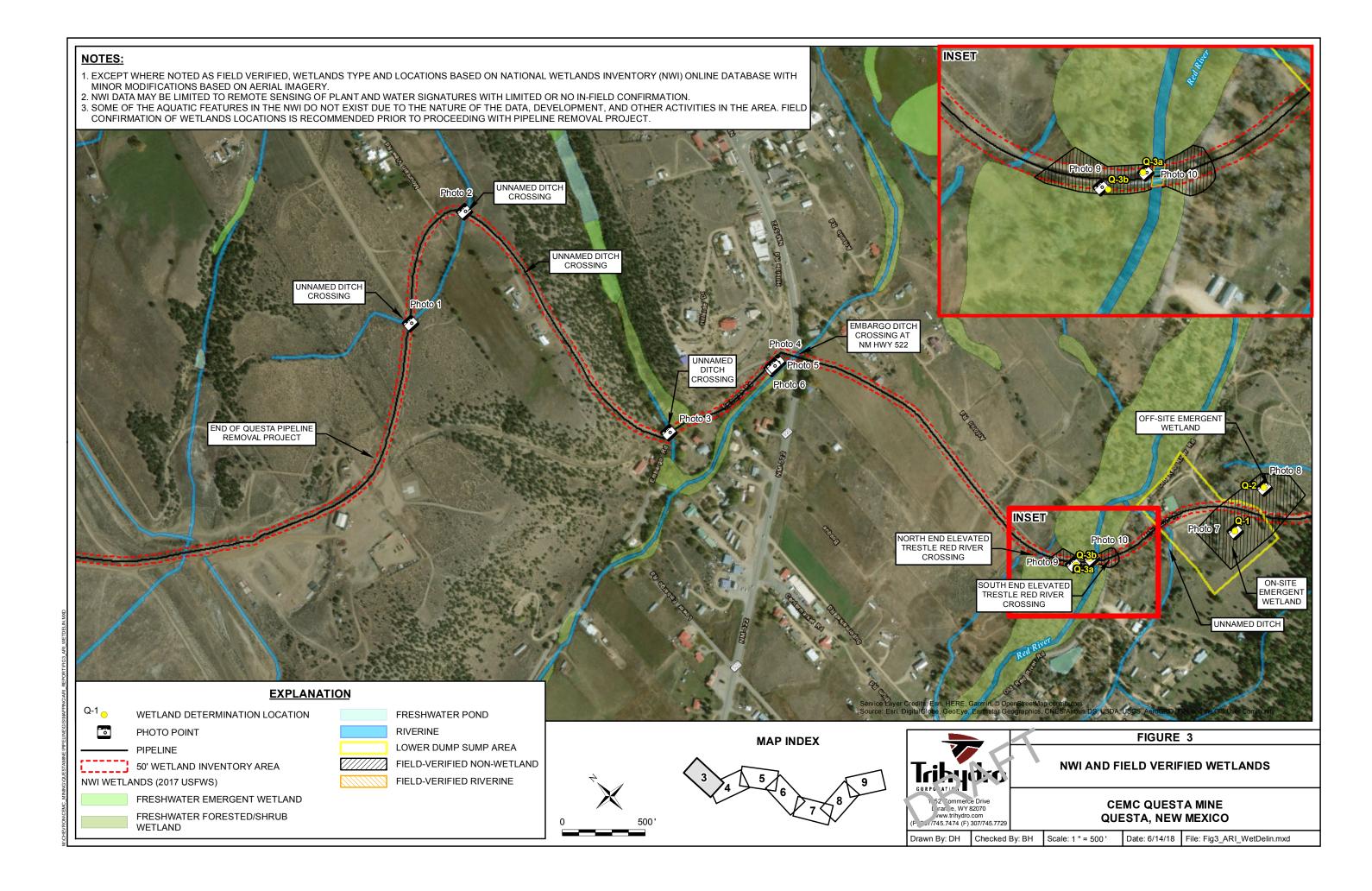
# TABLE 3. AQUATIC RESOURCES IMPACTS SUMMARY

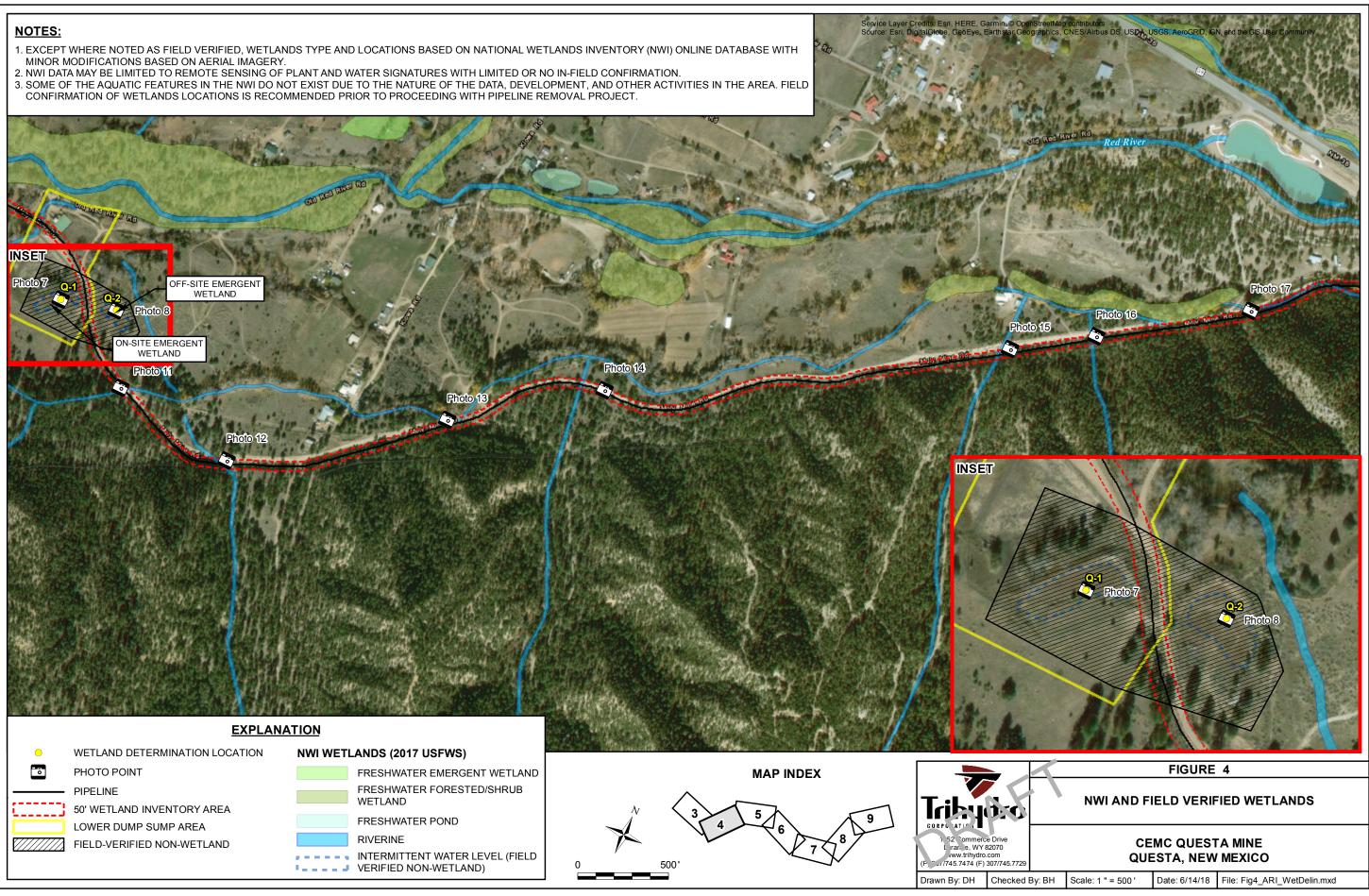
FIGURES

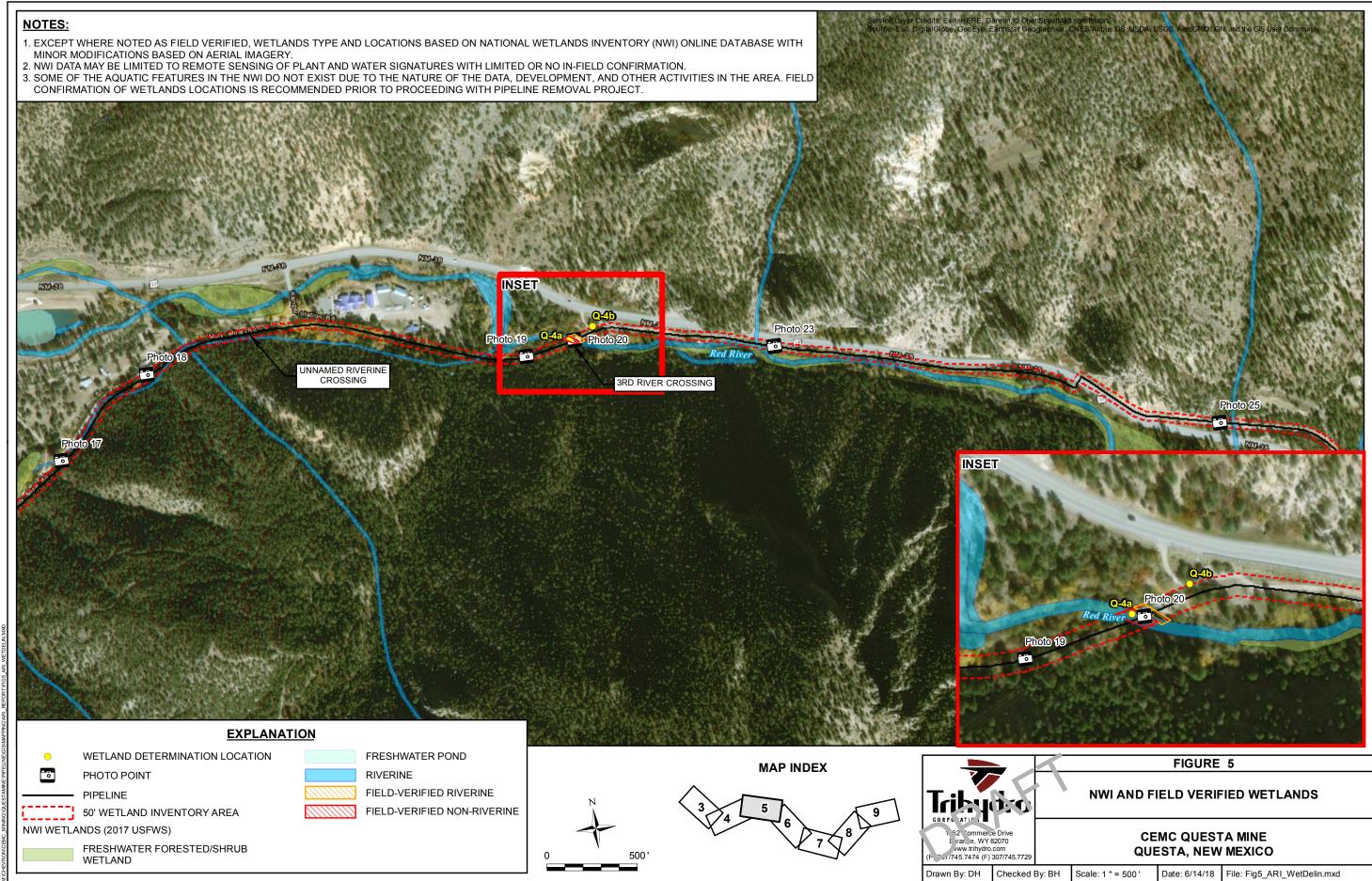












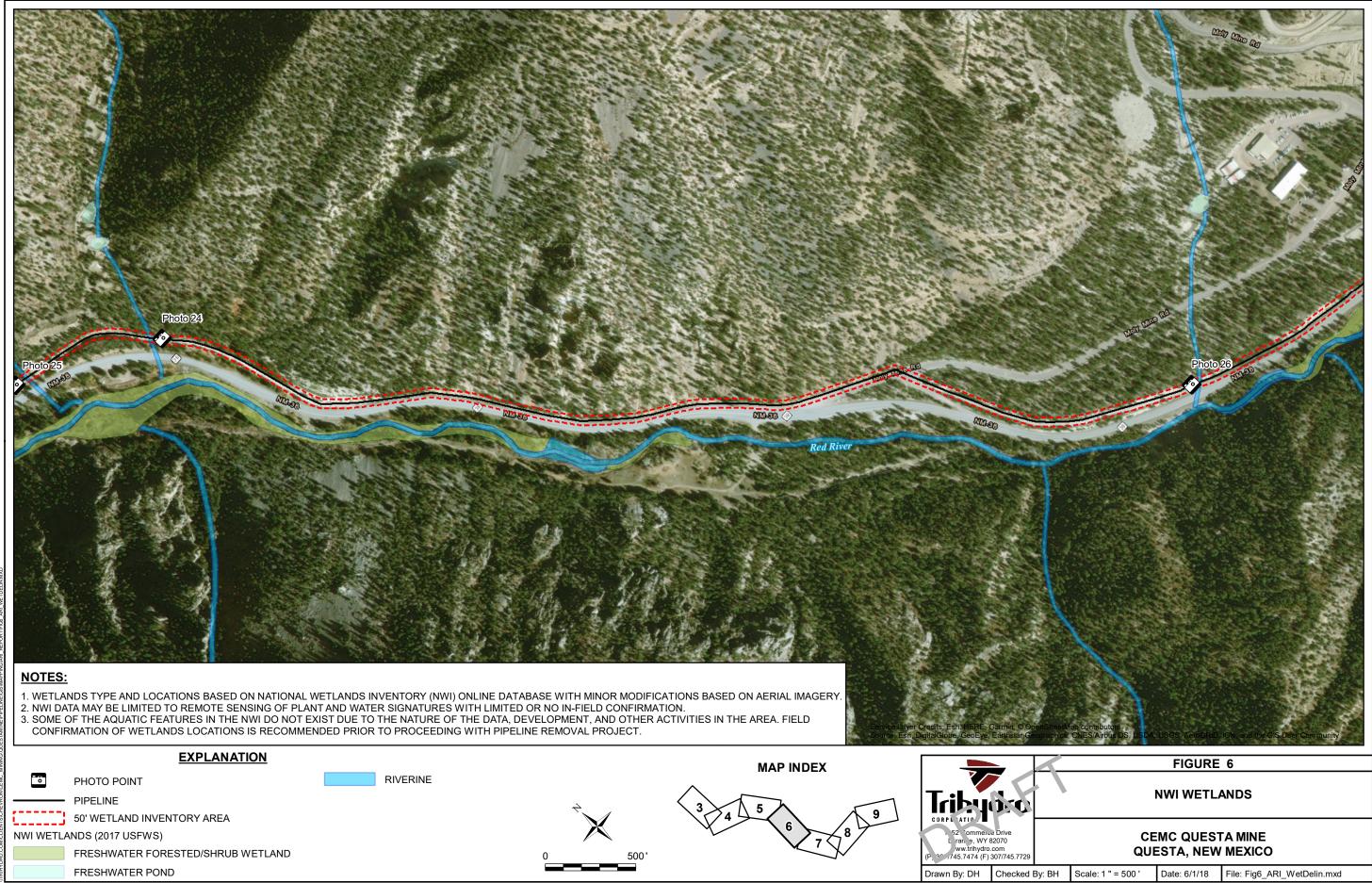
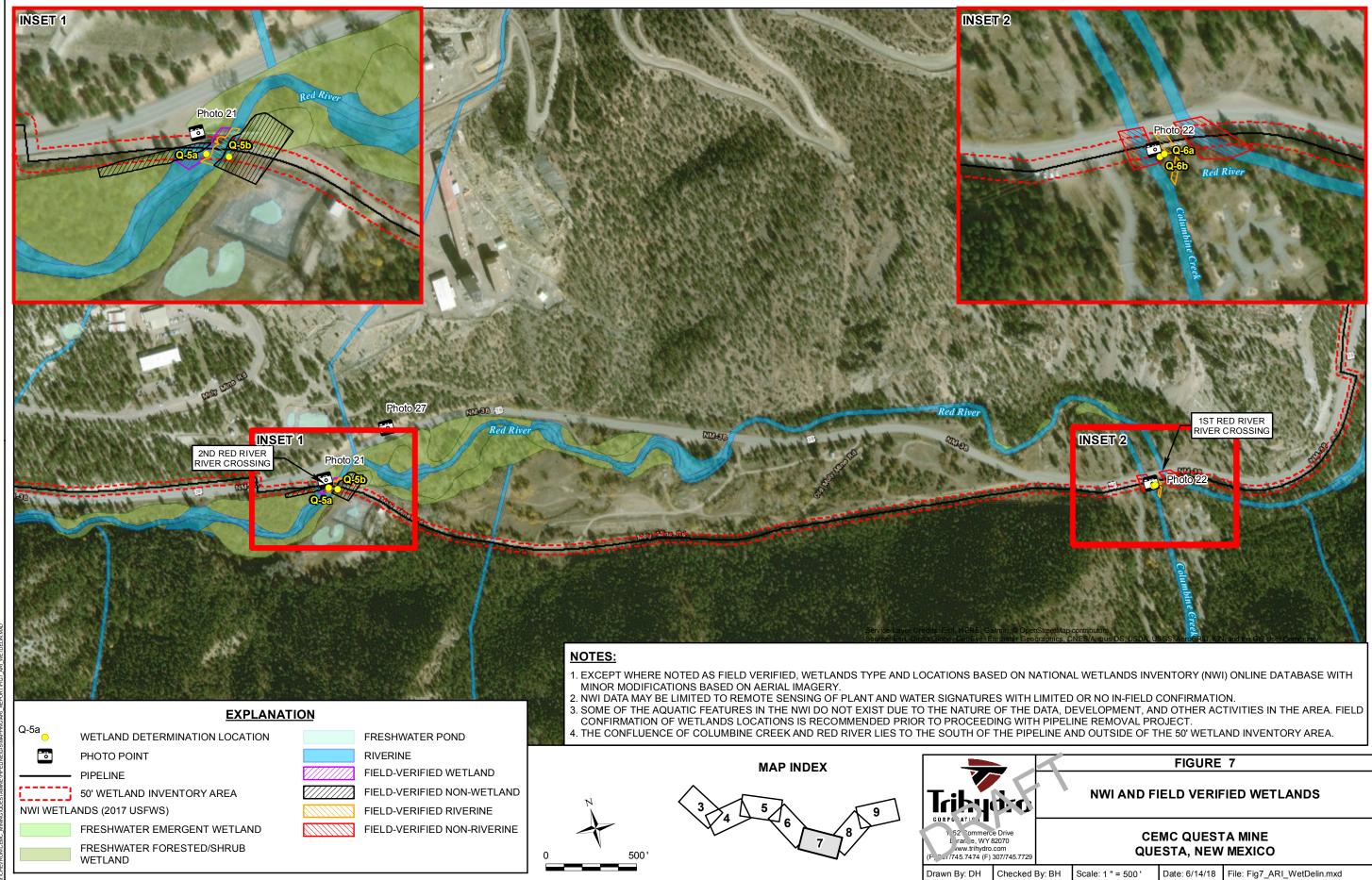


	FIGURE 6									
	NWI WETLANDS									
29	CEMC QUESTA MINE QUESTA, NEW MEXICO									
d E	By: BH	Scale: 1 " = 500 '	Date: 6/1/18	File: Fig6_ARI_WetDelin.mxd						



729			MC QUEST ESTA, NEW	
ed E	3y: BH	Scale: 1 " = 500 '	Date: 6/14/18	File: Fig7_ARI_WetDelin.mxd

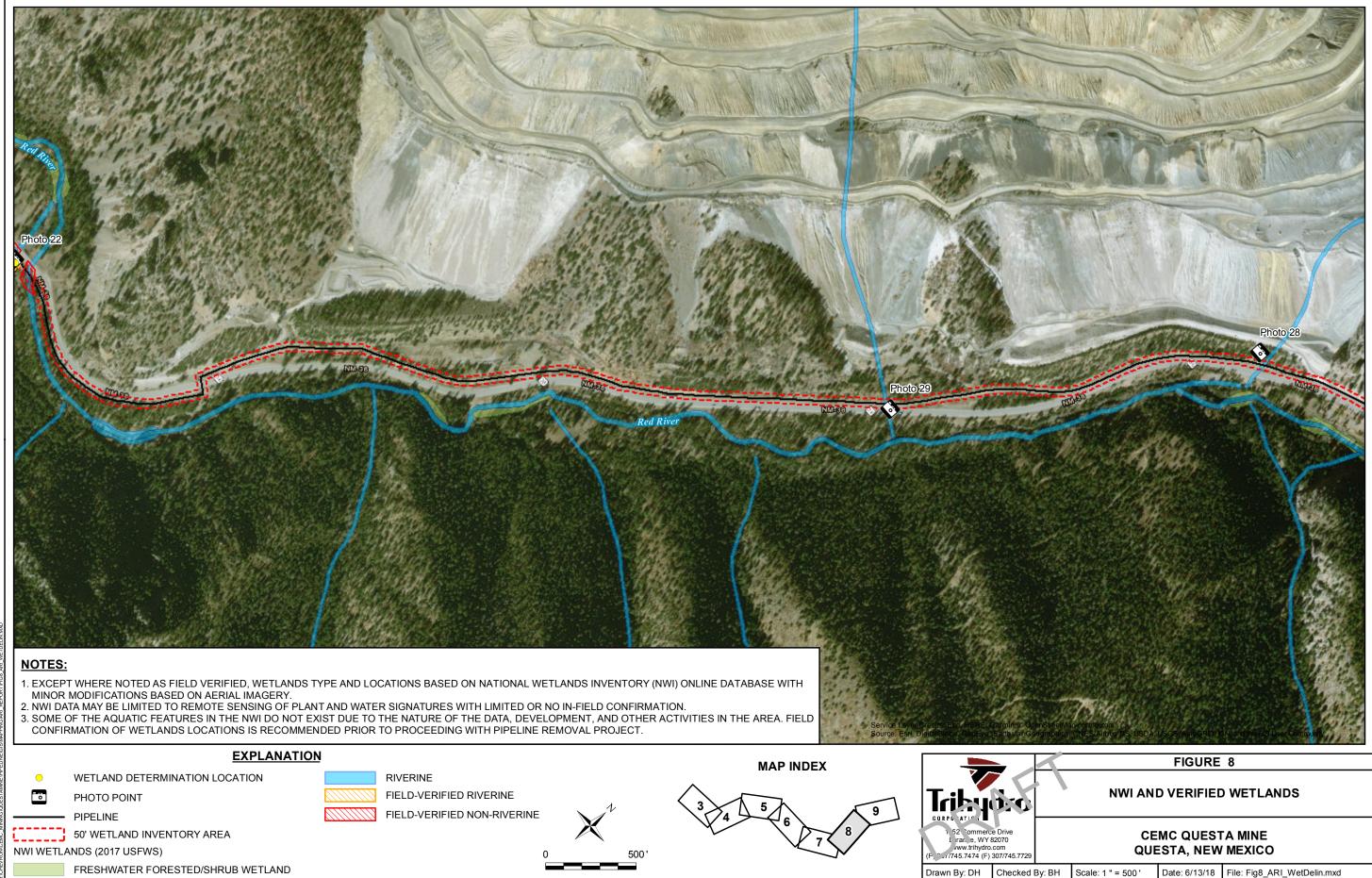
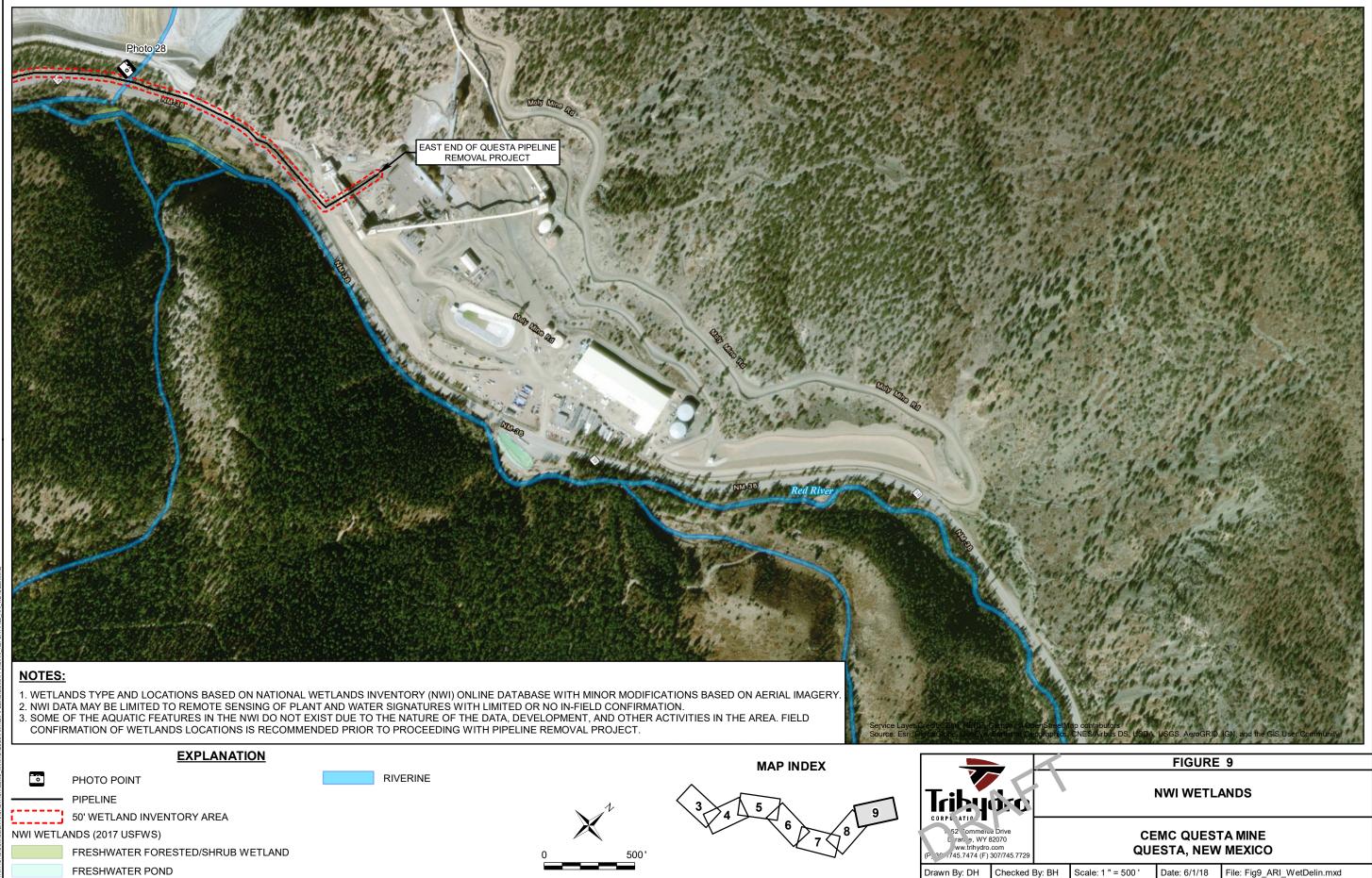


	FIGURE 8								
NWI AND VERIFIED WETLANDS									
29			MC QUEST ESTA, NEW						
d By	y: BH	Scale: 1 " = 500 '	Date: 6/13/18	File: Fig8_ARI_WetDelin.mxd					



Date: 6/1/18 File: Fig9\_ARI\_WetDelin.mxd

**APPENDIX A** 

WETLAND DETERMINATION DATA FORMS



Project/Site:Questa Pipeline Removal Project	City/County: Questa/Taos	Sampling Date: 5/9/2018
Applicant/Owner:	State: NM	
Investigator(s): Erik Schmude, Tony Kupilik	Section, Township, Range:	
Landform (hillslope, terrace, etc.): man-made depression	_ Local relief (concave, convex, none):	Slope (%): 0-1
Subregion (LRR): LRRE Lat:	Long:	Datum:
Soil Map Unit Name: Tenorio loam, 1 to 5 % slopes	NWI c	lassification: PEM1Ch
Are climatic / hydrologic conditions on the site typical for this time of y Are Vegetation <u>yes</u> , Soil <u>yes</u> , or Hydrology <u>yes</u> significantl		in in Remarks.) nces" present? Yes _ ✔ No
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally p		•
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locations, trans	sects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>√</u> No <u>√</u> No <u>√</u>	Is the Sampled Area within a Wetland?	Yes	No		
Remarks:							
Disturbed area, previously created h	olding pond t	for tailings					

20'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				
3				Total Number of Dominant 2 Species Across All Strata: (B)
4				Percent of Dominant Species 0
Sapling/Shrub Stratum (Plot size: 15')		= Total Co	ver	That Are OBL, FACW, or FAC: (A/B)
				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species         x 1 =
3				-
4				FACW species x 2 =
5				FAC species $1$ x 3 = $3$
· · · · · · · · · · · · · · · · · · ·				FACU species <u>1</u> x 4 = <u>4</u>
Herb Stratum (Plot size: 5')		= Total Co	ver	UPL species x 5 =
1. Bromus tectorum	7	yes	NL	Column Totals: 2 (A) 7 (B)
2. Heterotheca villosa	8	yes	NL	35
3. Bassia scoparia	2	no	FAC	Prevalence Index = B/A =3.5
Crytantha cinera		no	NL	Hydrophytic Vegetation Indicators:
	<u> </u>			1 - Rapid Test for Hydrophytic Vegetation
5. Verbascum thaspus	1	no	FACU	2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11				be present, unless disturbed or problematic.
	40			be present, unless disturbed of problematic.
Weady Vine Stratum (Plat aize: 30')	40	= Total Cov	/er	be present, unless disturbed of problematic.
Woody Vine Stratum (Plot size: <u>30'</u> )	19	-		
1	19	-		Hydrophytic
	19	-		Hydrophytic Vegetation
1		-		Hydrophytic
1 2 % Bare Ground in Herb Stratum		- 		Hydrophytic Vegetation
1 2		- 		Hydrophytic Vegetation

		e to the de				or confir	rm the absence of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	s Type <sup>1</sup>	Loc <sup>2</sup>	- Texture Remarks
<u>0-18</u>	7.5YR 3/2	99	7.5YR 5/8	1	C	<u></u> M	silty clay loan disturbed soil
			I=Reduced Matrix, C I LRRs, unless othe			ed Sand G	Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils <sup>3</sup> :
Black H     Hydrog     Deplete     Thick E     Sandy     Sandy	Epipedon (A2)		Sandy Redox (     Stripped Matrix     Loamy Mucky     Loamy Gleyed     Depleted Matri     Redox Dark Su     Depleted Dark     Redox Deprese	(S6) Mineral (F Matrix (F2 x (F3) urface (F6) Surface (F6)	2)	t MLRA 1	<ul> <li>2 cm Muck (A10)</li> <li>Red Parent Material (TF2)</li> <li>Very Shallow Dark Surface (TF12)</li> <li>Other (Explain in Remarks)</li> <li><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</li> </ul>
	Eayer (il present):						
	nches):						Hydric Soil Present? Yes No _✓
Remarks:							
HYDROLO	DGY						
	ydrology Indicators						
Primary Ind	licators (minimum of	one require	ed; check all that app	ly)			Secondary Indicators (2 or more required)
Surface	e Water (A1)		Water-Sta	ained Leav	es (B9) ( <b>e</b>	xcept	Water-Stained Leaves (B9) (MLRA 1, 2,

Primary Indicators (minimum	Secondary Indicators (2 or more require	<u>;d)</u>		
Surface Water (A1)	-	Water-Stained Leaves (B9) (exce	bt Water-Stained Leaves (B9) (MLRA	1, 2,
High Water Table (A2)		MLRA 1, 2, 4A, and 4B)	4A, and 4B)	
Saturation (A3)	-	Salt Crust (B11)	Drainage Patterns (B10)	
Water Marks (B1)	-	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)	
Sediment Deposits (B2)	-	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imager	/ (C9)
Drift Deposits (B3)	-	Oxidized Rhizospheres along Livi	ng Roots (C3) 🗹 Geomorphic Position (D2)	
Algal Mat or Crust (B4)	-	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)	
Iron Deposits (B5)	-	Recent Iron Reduction in Tilled So	ils (C6) FAC-Neutral Test (D5)	
Surface Soil Cracks (B6)	-	Stunted or Stressed Plants (D1) (	.RR A) Raised Ant Mounds (D6) (LRR A)	
Inundation Visible on Aer	ial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)	
Sparsely Vegetated Cond	cave Surface (B8)			
Field Observations:				
Surface Water Present?	Yes No No	/ Depth (inches):		
Water Table Present?	Yes No	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes No No	Depth (inches):	Wetland Hydrology Present? Yes No	<u> </u>
Describe Recorded Data (stre	am gauge, monitorir	ng well, aerial photos, previous inspec	ions), if available:	
Remarks:				
Area has been constructed	with berms around	d outside and is a depression. No	evidence of water ponding on aerial imagery.	

Project/Site:Questa Tailing Pipeline Removal Project	City/County: Questa/Taos	Sampling Date:5/10/2018
Applicant/Owner: Chevron	State: <u>NM</u>	
Investigator(s): Erik Schmude	Section, Township, Range:	
Landform (hillslope, terrace, etc.): man-made depression	Local relief (concave, convex, none):	oncave Slope (%).0-1
Subregion (LRR): LRR E Lat: _	Long:	
Soil Map Unit Name: <u>Tenorio loam, 1 to 5% slopes</u>	NWI d	classification: PEM1Ch
Are climatic / hydrologic conditions on the site typical for this time of		ain in Remarks.)
Are Vegetation <u>yes</u> , Soil <u>yes</u> , or Hydrology <u>yes</u> significar	ntly disturbed? Are "Normal Circumsta	ances" present? Yes 🗹 No
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally	problematic? (If needed, explain any	answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showi	ng sampling point locations, tran	sects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>✓</u> No <u>✓</u> No <u>√</u>	Is the Sampled Area within a Wetland?	Yes	No			
Remarks:		f						
Disturbed area, previously created holding pond for tailings								

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species 1
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				(-)
		= Total Co		Percent of Dominant Species 50
Sapling/Shrub Stratum (Plot size: 15')			VEI	That Are OBL, FACW, or FAC: (A/B)
1,				Prevalence Index worksheet:
				Total % Cover of: Multiply by:
2				OBL species x 1 =
3				FACW species x 2 =
4				FAC species $10 \times 3 = 30$
5				
51		= Total Co	ver	FACU species x 4 =
Herb Stratum (Plot size: 5')				UPL species x 5 =
1. Polygonum ramosissimum	10	yes	FAC	Column Totals: <u>10</u> (A) <u>30</u> (B)
2. Bromus tectorum	4	yes	NL	Prevalence Index = $B/A = 3.00$
3. Heterotheca villosa	5	yes	NL	Hydrophytic Vegetation Indicators:
4. Antennaria sp.	1	no	NL	1 - Rapid Test for Hydrophytic Vegetation
5. Descurainia pinnata	1	no	NL	2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7 8				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				5 - Wetland Non-Vascular Plants <sup>1</sup>
9				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11	04			be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30')	21	= Total Cov	/er	
1				Hydrophytic
2				Vegetation Present? Yes No √
79		= Total Cov	ver	
% Bare Ground in Herb Stratum				
Remarks:				
Mostly non-listed aposion that are indirative of unlan	daraaa			
Mostly non-listed species that are indicative of uplan	u aleas			

Depth	Matrix		Redox Features			
(inches)	Color (moist)	%	Color (moist) % Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-5	7.5YR 3/2	100		5	silty clay loam	
5-16	7.5YR 3/2	100			sandy clay loam	
<i></i>			Reduced Matrix, CS=Covered or Coated	Sand Gra		PL=Pore Lining, M=Matrix.
		able to all L	RRs, unless otherwise noted.)			Problematic Hydric Soils <sup>3</sup> :
Histoso		-	Sandy Redox (S5)		2 cm Muck	
	Epipedon (A2) Iistic (A3)	-	Stripped Matrix (S6) Loamy Mucky Mineral (F1) ( <b>except N</b>			Material (TF2) w Dark Surface (TF12)
	en Sulfide (A4)	-	_ Loamy Gleyed Matrix (F2)	VILKA I)		ain in Remarks)
	ed Below Dark Surfac	- (A11)	Depleted Matrix (F3)			all in Remarks)
	Dark Surface (A12)	<u> </u>	Redox Dark Surface (F6)		<sup>3</sup> Indicators of hy	drophytic vegetation and
	Mucky Mineral (S1)		Depleted Dark Surface (F7)			ology must be present,
	Gleyed Matrix (S4)	_	Redox Depressions (F8)			bed or problematic.
Restrictive	Layer (if present):					
Type:						
	nches):				Hvdric Soil Presen	it? Yes No_√_
Remarks:	,					
	soil mostly consiste	nt throughc	ut			
YDROLC						
-	drology Indicators:					
rimary Ind	icators (minimum of o	ne required;	check all that apply)		Secondary In	dicators (2 or more required)
	e Water (A1)		Water-Stained Leaves (B9) (exc	cept	Water-Sta	ained Leaves (B9) (MLRA 1, 2
-	ater Table (A2)		MLRA 1, 2, 4A, and 4B)			nd 4B)
	ion (A3)		Salt Crust (B11)			Patterns (B10)
	Marks (B1)		Aquatic Invertebrates (B13)			on Water Table (C2)
	ent Deposits (B2)		Hydrogen Sulfide Odor (C1)			n Visible on Aerial Imagery (C
	eposits (B3)		Oxidized Rhizospheres along Li	-	· · — ·	hic Position (D2)
-	lat or Crust (B4)		Presence of Reduced Iron (C4)			Aquitard (D3)
	posits (B5)		Recent Iron Reduction in Tilled		· <u> </u>	tral Test (D5)
	e Soil Cracks (B6)		Stunted or Stressed Plants (D1)	) ( <b>LRR A</b> )		nt Mounds (D6) (LRR A)
	tion Visible on Aerial I	••••			Frost-Hea	ave Hummocks (D7)
	ly Vegetated Concave	e Surface (B	3)			
Field Obse			,			
Surface Wa			o Depth (inches):			
Nater Table	e Present? Y	es N	o Depth (inches):	-		
Saturation F	Present? Y	es N	o 🖌 Depth (inches):	Wetla	and Hydrology Prese	nt? Yes No _✓

Remarks:

Area has been constructed with berms around outside and is a depression. No evidence of water ponding on aerial imagery.

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

(includes capillary fringe)

Project/Site:Questa Tailings Pipeline Removal Project	_ City/County:	Sampling Date:5/10/2018				
Applicant/Owner: Chevron	State:	$\bigcirc$ 3 $\bigcirc$				
Investigator(s): Erik Schmude, Tony Kupilik	Section, Township, Range:					
Landform (hillslope, terrace, etc.): Floodplain	_ Local relief (concave, convex, none):	ave Slope (%):1				
	Long:	Datum:				
Soil Map Unit Name: Fluvents nearly level	NWI class	sification: none				
Are climatic / hydrologic conditions on the site typical for this time of y	year? Yes No (If no, explain	in Remarks.)				
Are Vegetation <u>no</u> , Soil <u>yes</u> , or Hydrology <u>yes</u> significantl	ly disturbed? Are "Normal Circumstance	es" present? Yes 🖌 No				
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally p	roblematic? (If needed, explain any an	swers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes <u>Ves</u> No	-					

Hydric Soil Present? Wetland Hydrology Present?	Yes Yes	No <mark>✓</mark> No <b>✓</b>	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

determination point placed below pipeline tressle, adjacent to river. Soil in this area has been disturbed and the ground surface has been elevated a couple feet above the river level and likely does not get inundated with water long enough to develop hydric soil.

201	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30')		Species?	Status	Number of Dominant Species 7	
1. Populus angustifolia	5	yes	FACW	That Are OBL, FACW, or FAC: (A)	
2. Betula occidentalis	10	yes	FACW		
3				Total Number of Dominant 7 Species Across All Strata: (B)	
4	15			Percent of Dominant Species 100	
Sapling/Shrub Stratum (Plot size: 15')	10	= Total Co	ver	That Are OBL, FACW, or FAC: (A/B	)
1. Betula occidentalis	60	yes	FACW	Prevalence Index worksheet:	
	20			Total % Cover of: Multiply by:	
2. <u>Salix exigua</u>		yes	FACW	OBL species         x 1 =	
3. Alnus incana	5	no	FACW		
4				FACW species x 2 =	
5				FAC species x 3 =	
	85	= Total Co	/or	FACU species x 4 =	
Herb Stratum (Plot size: 5')		- 10101 00	VCI	UPL species x 5 =	
1. Agrostis stolonifera	30	yes	FAC	Column Totals: (A) (B)	
2. Poa pratensis	10	yes	FAC	Dravelance Index D/A	
3. Equisetum arvense	3	no	FAC	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:	
4 Teraxacum officianle	2	no	NL		
5. Carex praegracilis	10	yes	FACW	<ul> <li> 1 - Rapid Test for Hydrophytic Vegetation</li> <li>✓ 2 - Dominance Test is &gt;50%</li> </ul>	
6				$\_$ 3 - Prevalence Index is $\leq 3.0^{1}$	
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	g
8					
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology must	
30'		= Total Cov	er	be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size:)					
1				Hydrophytic	
2				Vegetation	
		= Total Cov	or	Present? Yes ✓ No	
% Bare Ground in Herb Stratum		= 10tal C0v	ei		
Remarks:					
vegetation is strongly hydrophytic, and typical riparia					

			pth needed to doc			or confirm	n the absence	of indicator	's.)	
Depth (inches)	Matrix Color (moist)	%	Re Color (moist)	dox Featur	res Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-6	10YR 3/2	48	10YR 5/8	2	C	M	loam			
0-6	10YR 4/4	48	10YR 5/8	2	С	М	sandy loam			
6-10	10YR 4/3	98	10YR 5/8	2	С	М	sandy	course sa	nd	
10-15	10YR 5/3	80	7.5YR 5/8	20	С	М	sandy	fine sand		
15-18	10YR 5/3	80	7.5YR 5/8	20	C	М	sandy gavel		r cobbles be	Now 15"
10-10	1011( 3/3		7.011(0/0			101	Sanuy yaver	Smail me		,1010 10
			·							
			·							
1 <u> </u>							. 21			
			I=Reduced Matrix, I LRRs, unless oth			ed Sand G			ore Lining, M ematic Hydri	
Histosol			Sandy Redox					n Muck (A10)	-	
	pipedon (A2)		Stripped Mat					Parent Mate		
	istic (A3)		Loamy Muck		(F1) (excep	t MLRA 1)			rk Surface (T	F12)
Hydroge	en Sulfide (A4)		Loamy Gleye					er (Explain in	Remarks)	
Deplete	d Below Dark Surf	ace (A11)	Depleted Mat	trix (F3)						
	ark Surface (A12)		Redox Dark	,	,				nytic vegetatio	
	Aucky Mineral (S1)		Depleted Dar						must be pres	
	Gleyed Matrix (S4) Layer (if present)		Redox Depre	essions (F8	3)		unles	s disturbed o	or problematic	
							Hydric Soil	Brocont?	Yes	No_✓
Remarks:	ches):						Hydric Soll	Present?	res	
HYDROLO			inches, but stron							
	drology Indicator	s'								
-			ed; check all that ap	(vlac			Secor	ndarv Indicat	ors (2 or more	e required)
	Water (A1)				aves (B9) (	except				(MLRA 1, 2,
	ater Table (A2)			A 1, 2, 4A				4A, and 4E		(, _,
Saturati	. ,		Salt Cru		. ,		D	rainage Patte		
Water N	larks (B1)		Aquatic		ites (B13)		Dry-Season Water Table (C2)			
Sedime	nt Deposits (B2)		Hydroge							Imagery (C9)
Drift De	posits (B3)		Oxidized	d Rhizospł	neres along	Living Ro	ots (C3) G	eomorphic F	osition (D2)	
Algal Ma	at or Crust (B4)		Presence	e of Redu	ced Iron (C	4)	S	hallow Aquita	ard (D3)	
Iron Dep	oosits (B5)		Recent	Iron Reduc	ction in Tille	ed Soils (C	6) 🖌 F.	AC-Neutral T	est (D5)	
Surface	Soil Cracks (B6)		Stunted	or Stresse	ed Plants (I	01) ( <b>LRR A</b>	N) R	aised Ant Mo	ounds (D6) (L	.RR A)
Inundati	on Visible on Aeria	al Imagery (E	37) Other (E	Explain in F	Remarks)		F	rost-Heave H	łummocks (D	7)
Sparsel	y Vegetated Conca	ve Surface	(B8)							
Field Obser	vations:									
Surface Wat	er Present?		No 🖌 Depth							
Water Table	Present?	Yes	No 🧹 Depth	(inches): _						
Saturation Present? Yes No _ ✓ Depth (inches): Wetland Hydrology Present? Yes No							No			
		im gauge, m	nonitoring well, aeria	al photos,	previous in	spections),	if available:			
Remarks:										
No sign of r	ecent water flow	over this a	rea. No drift depo	osits or se	ediment.					

Project/Site:Questa Tailings Pipeline Removal Project	_ City/County: Ques	sta/Taos	Sampling Date:	5/10/2018
Applicant/Owner: Chevron			Sampling Point:	
Investigator(s): Erik Schmude, Tony Kupilik	Section, Township	, Range:		
Landform (hillslope, terrace, etc.): Terrace	Local relief (conca	ave, convex, none): <u>concave</u>	Slo	ope (%): <u>3</u>
Subregion (LRR): LRR E Lat:		Long:	Datu	ım:
Soil Map Unit Name: Fluvents nearly level		NWI classific	ation: none	
Are climatic / hydrologic conditions on the site typical for this time of Are Vegetation <u>yes</u> , Soil <u>yes</u> , or Hydrology <u>yes</u> significan Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally	ntly disturbed?	No (If no, explain in Ro Are "Normal Circumstances" p (If needed, explain any answe	resent? Yes	/ No
SUMMARY OF FINDINGS – Attach site map showin	ng sampling poi	nt locations, transects	, important fe	eatures, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes Yes	No <u>✓</u> No <u>✓</u>	Is the Sampled Area		
Wetland Hydrology Present?	Yes	No 🖌	within a Wetland?	Yes	No <u>√</u>
Remarks:					

determination point placed just west of pipeline tressle. Vegetation appears to have been maintained at some point.

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species 2
<sub>1.</sub> Populus angustifolia	10	yes	FACW	That Are OBL, FACW, or FAC: (A)
2. juniperus scoparium	20	yes	NL	Total Number of Dominant
3				Species Across All Strata: (B)
4.				
Sapling/Shrub Stratum (Plot size: 15')	15	= Total Co	ver	Percent of Dominant Species 25 That Are OBL, FACW, or FAC: (A/B)
<u>Saping/Sirido Stratum</u> (Piot size:)	20	ves	NL	Prevalence Index worksheet:
2. Rosa woodsii	30			Total % Cover of:Multiply by:
		yes	FACU	OBL species x 1 =
3. Juniperus scoparium	10	yes	NL	FACW species $10   x 2 = 20$
4				FAC species $10$ $x_3 = 30$
5				
	85	= Total Co	ver	FACU species <u>34</u> x 4 = <u>136</u>
Herb Stratum (Plot size: 5')		-		UPL species x 5 =
<sub>1.</sub> Agrostis stolonifera	8	yes	FAC	Column Totals: <u>54</u> (A) <u>186</u> (B)
2. Bromus tectorum	4	yes	NL	Prevalence Index = B/A =3.44
3. Muhlengergia wrightii	3	yes	FACU	Hydrophytic Vegetation Indicators:
4. Helianthus annuus	1	no	FACU	1 - Rapid Test for Hydrophytic Vegetation
5. Rumex crispus	1	no	FAC	2 - Dominance Test is >50%
6. Poa pratensis	1	no	FAC	
				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11		Table		be present, unless disturbed or problematic.
30' <u>Woody Vine Stratum</u> (Plot size:)	00	= Total Cov	/er	
1				Hydrophytic Vegetation
2				Present? Yes No √
% Bare Ground in Herb Stratum		= Total Cov	ver	
Remarks:				
vegetation is strongly hydrophytic, and typical riparia	n vegetatio	on for the a	area	

	ription: (Describe	to the dep	in needed to docum				n the absence	of indicators.)
Depth	Matrix			K Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-5	7.5YR 3/2	100					clay loam	some small gravel and sand
5-7	7.5YR 3/2	95	7.5YR 5/8	5	С	М	clay loam	some small gravel and sand
7-16	7.5YR 3/3	90	10YR 5/8	10	С	Μ	sandy loam	some gravel and small cobbles
·					·			
					·			
	oncentration, D=Depl					d Sand G		cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applica	able to all	LRRs, unless other	wise not	ed.)		Indicato	ors for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redox (S					n Muck (A10)
	pipedon (A2)		Stripped Matrix					Parent Material (TF2)
Black Hi			Loamy Mucky M			MLRA 1)		y Shallow Dark Surface (TF12)
	en Sulfide (A4) d Below Dark Surface	ο (Δ11)	Loamy Gleyed N Depleted Matrix		2)			er (Explain in Remarks)
	ark Surface (A12)	- (ATT)	Redox Dark Sur				<sup>3</sup> Indicate	ors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark S	. ,				nd hydrology must be present,
	Gleyed Matrix (S4)		Redox Depressi		,			s disturbed or problematic.
Restrictive I	Layer (if present):							
Туре:								
Depth (ind	ches):						Hydric Soil	Present? Yes No _✓
Remarks:								
Redox conc	entrations below 5	". but soil	matrix has not bee	en deple	ted indica	itina upla	and soil	
				•		0.1		
HYDROLO	CV							
	drology Indicators:							
-								
		no roquiror	t abook all that apply	d)			Sooo	adary Indiactors (2 or more required)
		ne required	t; check all that apply					ndary Indicators (2 or more required)
	Water (A1)	ne required	Water-Stai	ned Leav		kcept		/ater-Stained Leaves (B9) (MLRA 1, 2,
-	ater Table (A2)	ne required	Water-Stai MLRA 2	ned Leav I, 2, 4A, a		kcept	V	/ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Saturatio	ater Table (A2) on (A3)	<u>ne requirec</u>	Water-Stai MLRA <sup>2</sup> Salt Crust	ned Leav I <b>, 2, 4A,</b> ; (B11)	and 4B)	kcept	V D	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irainage Patterns (B10)
Saturatio	ater Table (A2) on (A3) larks (B1)	<u>ne requirec</u>	Water-Stai MLRA Salt Crust Aquatic Inv	ned Leav I <b>, 2, 4A,</b> ( (B11) vertebrate	and <b>4B)</b> es (B13)	kcept	v c	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irainage Patterns (B10) Iry-Season Water Table (C2)
Saturatio Water M Sedimer	ater Table (A2) on (A3) larks (B1) nt Deposits (B2)	<u>ne requirec</u>	Water-Stai     MLRA     Salt Crust     Aquatic Inv     Hydrogen S	ned Leav I, 2, 4A, a (B11) vertebrate Sulfide O	and 4B) es (B13) dor (C1)		v c s	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Prainage Patterns (B10) Pry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
Saturatio Water M Sedimer Drift Dep	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	<u>ne requirec</u>	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R	ned Leav I, <b>2, 4A</b> , a (B11) vertebrate Sulfide O hizosphe	and 4B) es (B13) dor (C1) eres along l	Living Ro	V C C S ots (C3) G	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Saturatio Water M Sedimer Drift Dep Algal Ma	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	<u>ne requirec</u>	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen S Oxidized R Presence o	ned Leav I, 2, 4A, a (B11) vertebrate Sulfide O hizosphe	and 4B) es (B13) dor (C1) eres along l ed Iron (C4	_iving Ro	V C C S S	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irainage Patterns (B10) Iry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) hallow Aquitard (D3)
Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ne required	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence o Recent Iro	ned Leav I, <b>2, 4A</b> , 5 (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct	and 4B) es (B13) dor (C1) res along I ed Iron (C4 on in Tilleo	Living Ro ) I Soils (C		Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5)
Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	atter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)		Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence o Recent Iron Stunted or	ned Leav I, <b>2, 4A</b> , a (B11) vertebrate Sulfide O hizosphe of Reduce n Reduct Stressed	and 4B) es (B13) dor (C1) res along I ed Iron (C4 on in Tilleo Plants (D	Living Ro ) I Soils (C	(C3) C C S ots (C3) G S 6) F ∧) R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irainage Patterns (B10) Iry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) hallow Aquitard (D3)
Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	magery (B7	Water-Stai MLRA ' Salt Crust ' Aquatic Inv Hydrogen ' Oxidized R Presence o Recent Iron Stunted or Other (Exp	ned Leav I, <b>2, 4A</b> , a (B11) vertebrate Sulfide O hizosphe of Reduce n Reduct Stressed	and 4B) es (B13) dor (C1) res along I ed Iron (C4 on in Tilleo Plants (D	Living Ro ) I Soils (C	(C3) C C S ots (C3) G S 6) F ∧) R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) Prainage Patterns (B10) Pry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) caised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave	magery (B7	Water-Stai MLRA / Salt Crust Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iron Stunted or Other (Exp	ned Leav I, <b>2, 4A</b> , a (B11) vertebrate Sulfide O hizosphe of Reduce n Reduct Stressed	and 4B) es (B13) dor (C1) res along I ed Iron (C4 on in Tilleo Plants (D	Living Ro ) I Soils (C	(C3) C C S ots (C3) G S 6) F ∧) R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) Prainage Patterns (B10) Pry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) caised Ant Mounds (D6) ( <b>LRR A</b> )
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations:	magery (B	Water-Stai MLRA / Salt Crust Aquatic Inv Hydrogen 3 Oxidized R Presence o Recent Iron Stunted or Other (Exp 38)	ned Leav I, 2, 4A, i (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re	and 4B) es (B13) dor (C1) res along I ed Iron (C4 on in Tilleo Plants (D <sup>-</sup> emarks)	Living Ro ) I Soils (C 1) ( <b>LRR A</b>	(C3) C C S ots (C3) G S 6) F ∧) R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) Prainage Patterns (B10) Pry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) caised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundatio     Sparsely     Field Obsern	tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In Vegetated Concave vations: er Present? Ye	magery (B Surface (I	Water-Stai     MLRA     Salt Crust     Aquatic Inv     Aquatic Inv     Hydrogen     Oxidized R     Presence c     Recent Iron     Stunted or     Other (Exp 38)	ned Leav I, 2, 4A, 4 (B11) rertebrate Sulfide O hizosphe of Reduce Reduce Stressed lain in Re	and 4B) es (B13) dor (C1) eres along I ed Iron (C4 on in Tilleo Plants (D <sup>2</sup> emarks)	Living Ro ) d Soils (C 1) (LRR A	(C3) C C S ots (C3) G S 6) F ∧) R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) Prainage Patterns (B10) Pry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) caised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser	tter Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial In v Vegetated Concave vations: er Present? Ye	magery (B Surface (I es I es I	Water-Stai     MLRA ✓     Salt Crust ✓     Aquatic Inv     Aquatic Inv     Oxidized R     Presence α     Recent Iron     Stunted or     Other (Exp 38)	(B11) rertebrate Sulfide O hizosphe of Reduce Stressed lain in Re	and 4B) es (B13) dor (C1) res along I ed Iron (C4 on in Tilleo Plants (D <sup>-</sup> emarks)	Living Ro ) 1 Soils (C 1) (LRR A	(C3) C C C S S S S S	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) ( <b>LRR A</b> ) rost-Heave Hummocks (D7)
Saturatio     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundatio     Sparsely     Field Obser     Surface Water     Vater Table     Saturation Pr     (includes cap	tter Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial In v Vegetated Concave vations: er Present? You Present? You persent? You	magery (B Surface (I es I es I	Water-Stai     MLRA ✓     Salt Crust ✓     Aquatic Inv     Hydrogen 3     Oxidized R     Presence 0     Recent Iron     Stunted or     Other (Exp 38)	ned Leav I, 2, 4A, i (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) rres along I ed Iron (C4 on in Tilleo Plants (D <sup>-</sup> emarks)	Living Ro ) 1 Soils (C 1) (LRR A — — — — — — — — — — — — — — — — —	(C3) C S ots (C3) G 6) F () R F	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) Prainage Patterns (B10) Pry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) caised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundatio     Sparsely     Field Obser     Surface Water     Vater Table     Saturation Pr     (includes cap	tter Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial In 7 Vegetated Concave vations: er Present? Ye resent? Ye	magery (B Surface (I es I es I	Water-Stai     MLRA ✓     Salt Crust ✓     Aquatic Inv     Hydrogen 3     Oxidized R     Presence 0     Recent Iron     Stunted or     Other (Exp 38)	ned Leav I, 2, 4A, i (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) rres along I ed Iron (C4 on in Tilleo Plants (D <sup>-</sup> emarks)	Living Ro ) 1 Soils (C 1) (LRR A — — — — — — — — — — — — — — — — —	(C3) C S ots (C3) G 6) F () R F	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) ( <b>LRR A</b> ) rost-Heave Hummocks (D7)
Saturatio     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundatio     Sparsely     Field Obser     Surface Water     Table     Saturation Pr     (includes cap     Describe Rec	tter Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial In v Vegetated Concave vations: er Present? You Present? You persent? You	magery (B Surface (I es I es I	Water-Stai     MLRA ✓     Salt Crust ✓     Aquatic Inv     Hydrogen 3     Oxidized R     Presence 0     Recent Iron     Stunted or     Other (Exp 38)	ned Leav I, 2, 4A, i (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) rres along I ed Iron (C4 on in Tilleo Plants (D <sup>-</sup> emarks)	Living Ro ) 1 Soils (C 1) (LRR A — — — — — — — — — — — — — — — — —	(C3) C S ots (C3) G 6) F () R F	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) ( <b>LRR A</b> ) rost-Heave Hummocks (D7)
Saturatio     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundatio     Sparsely     Field Obser     Surface Water     Vater Table     Saturation Pr     (includes cap	tter Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial In v Vegetated Concave vations: er Present? You Present? You persent? You	magery (B Surface (I es I es I	Water-Stai     MLRA ✓     Salt Crust ✓     Aquatic Inv     Hydrogen 3     Oxidized R     Presence 0     Recent Iron     Stunted or     Other (Exp 38)	ned Leav I, 2, 4A, i (B11) rertebrate Sulfide O hizosphe of Reduce n Reduct Stressed lain in Re ches): ches):	and 4B) es (B13) dor (C1) rres along I ed Iron (C4 on in Tilleo Plants (D <sup>-</sup> emarks)	Living Ro ) 1 Soils (C 1) (LRR A — — — — — — — — — — — — — — — — —	(C3) C S ots (C3) G 6) F () R F	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) ( <b>LRR A</b> ) rost-Heave Hummocks (D7)

Project/Site:Questa Tailings Pipeline Removal Project	_ City/County: Questa/Taos		Sampling Date:	5/10/2018
Applicant/Owner: Chevron	S		Sampling Point:	
Investigator(s): Erik Schmude, Tony Kupilik	Section, Township, Range:			
Landform (hillslope, terrace, etc.): floodplain	Local relief (concave, convex,	none): <u>concave</u>	Slo	ope (%):1-3
Subregion (LRR): LRR E Lat: _	Long:		Datu	ım:
Soil Map Unit Name: <u>Rock outcrop-badland complex</u> , very stee	ер	NWI classifica	ation: none	
Are climatic / hydrologic conditions on the site typical for this time of Are Vegetation <u>yes</u> , Soil <u>yes</u> , or Hydrology <u>no</u> significan Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally	tly disturbed? Are "Normal	lf no, explain in Re Circumstances" pr xplain any answer	resent? Yes	No
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point location	ns, transects,	, important fe	eatures, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No _✔ No _✔	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30'</u> )	<u>% Cover</u> 95	Species?		Number of Dominant Species 2	
1. Betula occidentalis	95	yes	FACW	That Are OBL, FACW, or FAC: (A	A)
2				Total Number of Dominant 3	
3					B)
4					
	95	= Total Co	ver	Percent of Dominant Species 66 That Are OBL, FACW, or FAC: (A	Δ/R)
Sapling/Shrub Stratum (Plot size: 15')					<u>л</u> р)
1. Betula occidentalis	40	yes	FACW	Prevalence Index worksheet:	
2. Abies concolor	2	no	NL	Total % Cover of: Multiply by:	
3				OBL species x 1 =	
				FACW species x 2 =	
4				FAC species x 3 =	
5	40			FACU species x 4 =	
Herb Stratum (Plot size: 5')	42	= Total Co	ver	UPL species x 5 =	
1. Bromus inermis	25	yes	UPL	Column Totals: (A)	(B)
	2		FAC		(2)
2. Agrostis stolonifera		no		Prevalence Index = B/A =	
3. Geum macrophyllum	2	no	FAC	Hydrophytic Vegetation Indicators:	
4. Equisetum arvense		no	FAC	1 - Rapid Test for Hydrophytic Vegetation	
5. Maianthemum racemosum	2	no	FAC	2 - Dominance Test is >50%	
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7				4 - Morphological Adaptations <sup>1</sup> (Provide suppo	ortina
8				data in Remarks or on a separate sheet)	Jung
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	)
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology mu	
11	33			be present, unless disturbed or problematic.	101
30' Woody Vine Stratum (Plot size: )	55	= Total Cov	ver		
1				Hydrophytic Vegetation	
2				Present? Yes <u>√</u> No	
% Bare Ground in Herb Stratum 67		= Total Cov	ver		
Remarks:				1	
Romano.					
Betula occidentalis dominated riparian area					

SOIL
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Profile Des Depth	cription: (Describ			cument the dox Featur	es			of indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-7	7.5YR 4/3	92	7.5YR 5/8	8	С	Μ	sandy	
7-10	7.5YR 3/2	45	7.5YR 5/8	5	С	Μ	sandy loam	
7-10	7.5YR 4/3	45	7.5YR 5/8	10	С	Μ	sand	coarser than 0.7 layer
10-16	7.5YR 4/3	98	7.5YR 5/8	2	С	Μ	gravelly sand	I
	·							
	·							
			Deduced Metrix					
	Concentration, D=De Indicators: (Appli					ted Sand G		cation: PL=Pore Lining, M=Matrix. rs for Problematic Hydric Soils <sup>3</sup> :
Histoso			Sandy Redo					n Muck (A10)
	pipedon (A2)		Stripped Mat					Parent Material (TF2)
	listic (A3)		Loamy Muck		F1) ( <b>exce</b>	pt MLRA 1)		/ Shallow Dark Surface (TF12)
Hydrog	en Sulfide (A4)		Loamy Gleye	ed Matrix (F	2)		Othe	er (Explain in Remarks)
·	d Below Dark Surfa	ace (A11)	Depleted Ma				2	
	ark Surface (A12)		Redox Dark					rs of hydrophytic vegetation and
	Mucky Mineral (S1) Gleyed Matrix (S4)		Depleted Da		. ,			nd hydrology must be present, s disturbed or problematic.
	Layer (if present):			5510115 (1 0	)		unies	
Type:								
	iches):						Hydric Soil	Present? Yes No ✓
Remarks:								
HYDROLC	)GY							
Wetland Hy	drology Indicators	6:						
Primary Indi	cators (minimum of	one require	d; check all that ap	oply)			Secor	ndary Indicators (2 or more required)
Surface	Water (A1)		✓ Water-S	Stained Lea	ves (B9) (	except	V	/ater-Stained Leaves (B9) (MLRA 1, 2,
High W	ater Table (A2)		MLR	A 1, 2, 4A,	and 4B)			4A, and 4B)
	ion (A3)		Salt Cru	ıst (B11)			D	rainage Patterns (B10)
Water M	/larks (B1)		Aquatic	Invertebrat	tes (B13)		D	ry-Season Water Table (C2)
	nt Deposits (B2)		Hydroge					aturation Visible on Aerial Imagery (C9)
	posits (B3)					g Living Ro		eomorphic Position (D2)
-	at or Crust (B4)			ce of Reduc				hallow Aquitard (D3)
	posits (B5)		Recent					AC-Neutral Test (D5)
	Soil Cracks (B6)		Stunted			D1) ( <b>LRR A</b>		aised Ant Mounds (D6) ( <b>LRR A</b> )
	ion Visible on Aeria ly Vegetated Conca	•••	, ,	Explain in R	(emarks)		F	rost-Heave Hummocks (D7)
Field Obse		ve Sunace	(DO)					
		Voc	No 🖌 Depth	(inches).				
Water Table			No <u>√</u> Depth					
Saturation F			No Depth				and Hydrology	y Present? Yes _✓ No
	pillary fringe)	res_	No Depth	(inches): <u>-</u>	0	wet		y Present? res <u>v</u> No
	ecorded Data (strea	m gauge, m	onitoring well, aeri	al photos, p	previous ir	spections),	if available:	
Remarks:								
point is loca	ated near river and	d sign of w	ater flowing and	inundating	g this are	ea is prese	nt.	

Project/Site: Questa Tailings Pipeline Removal Project	City/County: Que	esta/Taos	Sampling Date:	5/10/2018
Applicant/Owner: Chevron		State: NM	Sampling Point:	
Investigator(s): Erik Schmude, Tony Kupilik	Section, Townsh	ip, Range:		
Landform (hillslope, terrace, etc.): hillslope	Local relief (con	cave, convex, none): Convex	Slo	pe (%): <u>3</u>
Subregion (LRR): LRR E Lat:	:	Long:	Datu	m:
Soil Map Unit Name: <u>Rock outcrop-badland complex, very st</u>	teep	NWI classifi	cation: <u>none</u>	
Are climatic / hydrologic conditions on the site typical for this time Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> signific Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> natural	antly disturbed?	No (If no, explain in F Are "Normal Circumstances" (If needed, explain any answe	present? Yes	/ No
SUMMARY OF FINDINGS - Attach site man show	vina samnlina na	oint locations transacte	s important fo	aturos oto

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No 🖌			
Hydric Soil Present?	Yes	No 🖌	Is the Sampled Area		
Wetland Hydrology Present?	Yes	No _ ✔	within a Wetland?	Yes	No <u> </u>
Remarks:					

point placed just to west of pipeline tressle. Area has been disturbed and appears vegetation has been maintained in past.

30'	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> )		Species?		Number of Dominant Species 0
1. Juniperus scoparium	80	yes	NL	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				
	00	= Total Co	ver	Percent of Dominant Species 0
Sapling/Shrub Stratum (Plot size: 15' )			VOI	That Are OBL, FACW, or FAC: (A/B)
1. Atriplex canescens	10	yes	NL	Prevalence Index worksheet:
2.				Total % Cover of: Multiply by:
				OBL species x 1 =
3				FACW species x 2 =
4				FAC species x 3 =
5				FACU species x 4 =
5'	10	= Total Co	ver	UPL species         x 5 =
<u>Herb Stratum</u> (Plot size: <u>5'</u> )	00			
1. Bromus inermis	80	yes	UPL	Column Totals: (A) (B)
2. Antennaria sp.	5	no	NL	Prevalence Index = B/A =
3. Bassia scoparia	5	no	FAC	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				$3 - Prevalence Index is \leq 3.0^{1}$
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				5 - Wetland Non-Vascular Plants <sup>1</sup>
9 10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11	~~	Tatal Oa		be present, unless disturbed or problematic.
30' Woody Vine Stratum (Plot size:)	50	= Total Cov	/er	
1				
				Hydrophytic Vegetation
2				Present? Yes No ✓
% Bare Ground in Herb Stratum		= Total Cov	/er	
Remarks:				
Upland species dominate area on hillslope				

		the depth			ator or confirm	n the absen	ce of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features <u>%</u> Typ	be <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
0-3		100		<u> </u>		clay loam	many fibrous roots
3-16		100					
5-10	2.5Y 5/3	100				clay	
				·			
				·			
				·			
	Concentration, D=Deplet				oated Sand G		Location: PL=Pore Lining, M=Matrix.
-	Indicators: (Applicab	le to all LF					ators for Problematic Hydric Soils <sup>3</sup> :
Histosol	( )		_ Sandy Redox (				cm Muck (A10)
	pipedon (A2)		_ Stripped Matrix				Red Parent Material (TF2)
	listic (A3) en Sulfide (A4)		Loamy Mucky M Loamy Gleyed		Cept MLRA 1		′ery Shallow Dark Surface (TF12) 0ther (Explain in Remarks)
	ed Below Dark Surface (	Δ11)	_ Loany Gleyed _ Depleted Matrix			_ (	
	ark Surface (A12)	<u> </u>	_ Redox Dark Su	. ,		<sup>3</sup> Indic	ators of hydrophytic vegetation and
	Mucky Mineral (S1)		_ Depleted Dark	. ,			etland hydrology must be present,
	Gleyed Matrix (S4)		Redox Depress				
Sandy (	Sleyeu Matrix (34)			ions (F8)		u	less disturbed or problematic.
	Layer (if present):			ions (F8)		u	less disturbed of problematic.
Restrictive							less disturbed or problematic.
Restrictive Type:	Layer (if present):			ions (F8)			
Restrictive Type: Depth (in	Layer (if present):			ions (F8)			
Restrictive Type:	Layer (if present):			ions (F8)			
Restrictive Type: Depth (in	Layer (if present):			ions (F8)			
Restrictive Type: Depth (in	Layer (if present):			ions (F8)			
Restrictive Type: Depth (in	Layer (if present):						
Restrictive Type: Depth (in Remarks:	Layer (if present):			ions (F8)			
Restrictive Type: Depth (in Remarks:	Layer (if present):			ions (F8)			
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy	Layer (if present):					Hydric S	
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy	Layer (if present): inches): OGY /drology Indicators: incators (minimum of one				except	Hydric S	oil Present? Yes No _✓
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indii Surface	Layer (if present): Inches): DGY Pdrology Indicators: Incators (minimum of one Water (A1)			γ)		Hydric S	oil Present? Yes No condary Indicators (2 or more required)
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Wa	Layer (if present): Inches): DGY Indicators: Inchoogy Inc			y) ined Leaves (Bs 1, 2, 4A, and 4		Hydric S	oil Present? Yes No _✓ <u>condary Indicators (2 or more required)</u> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Wa Saturati	Layer (if present): hches): DGY rdrology Indicators: icators (minimum of one Water (A1) ater Table (A2) ion (A3)		<u></u>	y) ined Leaves (B <b>1, 2, 4A, and 4</b> (B11)	B)	Hydric S	oil Present? Yes No _✓ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water M	Layer (if present): https://www.achestriction.com/ DGY rdrology Indicators: cators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1)			y) ined Leaves (B <b>1</b> <b>1, 2, 4A, and 4</b> (B11) vertebrates (B1	<b>B)</b> 3)	Hydric S	oil Present? Yes No _✓ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime	Layer (if present): https://www.accenteries.com/ DGY /drology Indicators: icators (minimum of one water (A1) ater Table (A2) ion (A3) /arks (B1) int Deposits (B2)			y) ined Leaves (Bs <b>1, 2, 4A, and 4</b> (B11) vertebrates (B1 Sulfide Odor (C	<b>B)</b> 3) :1)	Hydric S	oil Present? Yes No _✓ <u>condary Indicators (2 or more required)</u> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De	Layer (if present): aches): DGY drology Indicators: cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3)		<u>check all that appl</u> Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F	y) ined Leaves (Bs <b>1, 2, 4A, and 4</b> (B11) vertebrates (B1 Sulfide Odor (C Rhizospheres al	3) :1) ong Living Ro	Hydric S	oil Present? Yes No _✓ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Restrictive Type: Depth (in Remarks: HYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal M	Layer (if present): aches): DGY drology Indicators: cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4)		<u>check all that appl</u> Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence	y) ined Leaves (Bs <b>1, 2, 4A, and 4</b> (B11) vertebrates (B1: Sulfide Odor (C Rhizospheres al of Reduced Iror	3) 3) 1) ong Living Ro n (C4)	Hydric S	oil Present? Yes No _✓ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Restrictive Type: Depth (in Remarks: TYDROLO Vetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Iron De	Layer (if present): aches): DGY rdrology Indicators: cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	y) ined Leaves (B <b>1, 2, 4A, and 4</b> (B11) vertebrates (B1 Sulfide Odor (C Rhizospheres al of Reduced Iror n Reduction in	3) 3) ong Living Ro n (C4) Tilled Soils (C	Hydric S	oil Present? Yes No _✓ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Restrictive Type: Depth (in Remarks: TYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Surface	Layer (if present): https://www.communicationscience/ cators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) soil Cracks (B6)	e required; c		y) ined Leaves (BS <b>1, 2, 4A, and 4</b> (B11) vertebrates (B1: Sulfide Odor (C Rhizospheres al of Reduced Iror n Reduction in Stressed Plant	3) 1) ong Living Ro n (C4) Tilled Soils (C s (D1) (LRR 4	Hydric S	oil Present? Yes No _✓ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Restrictive Type: Depth (in Remarks:  TYDROLO  Vetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma Surface Iron De Inundati	Layer (if present): aches): DGY rdrology Indicators: cators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	e required; c		y) ined Leaves (B <b>1, 2, 4A, and 4</b> (B11) vertebrates (B1 Sulfide Odor (C Rhizospheres al of Reduced Iror n Reduction in	3) 1) ong Living Ro n (C4) Tilled Soils (C s (D1) (LRR 4	Hydric S	oil Present? Yes No _✓ condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)

Field Observations:							
Surface Water Present?	Yes	No	Depth (inches):				
Water Table Present?	Yes	No	Depth (inches):				
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	Wetland Hydrology Present?	Yes	No	<u> </u>
Describe Recorded Data (strea	am gauge, n	nonitoring w	ell, aerial photos, previous inspec	tions), if available:			
Remarks:							

Project/Site:Questa Tailings Pipeline Removal Project	_ City/County: Questa/Taos	Sampling Date:5/10/2018
Applicant/Owner: Chevron	State: NM	Sampling Point:Q-5a
Investigator(s): Erik Schmude, Tony Kupilik	Section, Township, Range:	
Landform (hillslope, terrace, etc.): floodplain	Local relief (concave, convex, none): <u></u>	Slope (%): <sup>1</sup>
Subregion (LRR): LRR E Lat:	Long:	Datum:
Soil Map Unit Name: Cumulic haploborolls, nearly level	NWI class	ification: R3USC
Are climatic / hydrologic conditions on the site typical for this time of Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> significan Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally	tly disturbed? Are "Normal Circumstances	" present? Yes 🧹 No
SUMMARY OF FINDINGS - Attach site man showing	na samplina point locations transoc	te important foaturos oto

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes 🖌 No		
Hydric Soil Present?	Yes 🗹 No	Is the Sampled Area	/
Wetland Hydrology Present?	Yes 🖌 No	within a Wetland?	Yes No
Remarks:		•	

point placed in adjacent area to river, which is only slightly elevated from the river. Water clearly flows here, on occasion.

30'	Absolute	Dominant		Dominance Test worksheet:		
Tree Stratum (Plot size: <u>30'</u> )	% Cover	Species?	Status	Number of Dominant Species 4		
1				That Are OBL, FACW, or FAC:	A)	
2				Total Number of Dominant		
3				4	B)	
					2)	
4				Percent of Dominant Species 100		
Sapling/Shrub Stratum (Plot size: 15')		_ = Total Cover		That Are OBL, FACW, or FAC: (A	A/B)	
1. Betula occidentalis	20	yes	FACW	Prevalence Index worksheet:		
2. Salix monticola	15	ves	OBL	Total % Cover of: Multiply by:		
	10	yes	FACW	OBL species x 1 =		
3. <u>Salix exigua</u>			TAON	FACW species x 2 =		
4				FAC species x 3 =		
5				FACU species         x 0 =           x 4 =		
5'	45	= Total Cover				
Herb Stratum (Plot size: 5')				UPL species x 5 =		
1. Agrostis stolonifera	70	yes	FAC	Column Totals: (A)	(B)	
2. Equisetum arvense	10	no	FAC	Prevalence Index = B/A =		
<sub>3.</sub> Barbarea vulgaris	4	no	FAC	Hydrophytic Vegetation Indicators:		
<sub>4.</sub> Mentha arvensis	2	no	FACW	1 - Rapid Test for Hydrophytic Vegetation		
5				$\checkmark$ 2 - Dominance Test is >50%		
6				$3 - Prevalence Index is \leq 3.0^{1}$		
78				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)		
				5 - Wetland Non-Vascular Plants <sup>1</sup>		
9				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
10		<u> </u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology mus		
11	00			be present, unless disturbed or problematic.	151	
Mandu Vine Stratum (Diet eizer	86	= Total Cov	/er			
Woody Vine Stratum (Plot size:)						
1				Hydrophytic		
2				Vegetation Present? Yes <u>√</u> No		
% Bare Ground in Herb Stratum 14		= Total Cov	/er			
Remarks:				•		

#### SOIL

Profile Desc	cription: (Describ	e to the de	pth needed to docu	ment the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix			ox Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3	10YR 4/3	90	5YR 5/8	10	С	M/PL	sandy loam	
3-5	10YR 4/2	70	5YR 5/8	30	С	M/PL	silty clay loa	m
5-6	10YR 4/2	70	5YR 5/8	30	С	PL :	silty clay	
6-9	7.5YR 4/3	60	5YR 5/8	40	С	M/PL	loamy sand	small gravel
			I=Reduced Matrix, C			d Sand Gr		cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	icable to al	I LRRs, unless oth	erwise not	ted.)		Indicate	ors for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redox					m Muck (A10)
	pipedon (A2)		Stripped Matri					d Parent Material (TF2)
	istic (A3)		Loamy Mucky			MLRA 1)		y Shallow Dark Surface (TF12)
	en Sulfide (A4)	() () ()	Loamy Gleyed		2)		Oth	er (Explain in Remarks)
	d Below Dark Surfa ark Surface (A12)	ace (ATT)	✓ Depleted Matr Redox Dark S		\ \		<sup>3</sup> Indicate	ors of hydrophytic vegetation and
	/ucky Mineral (S1)		Depleted Dark					and hydrology must be present,
-	Gleyed Matrix (S4)		Redox Depres		,			ss disturbed or problematic.
	Layer (if present)		'	( )				•
Type: Riv								
Depth (inc	ches): <u>9</u>						Hydric Soil	Present? Yes No
Remarks:	,						-	
Stong rodov	( concontrations	in the metr	ix and pore lining	bolow 3	inchos '	R' to 6" do	plotod matrix	x = bydrie soil
Storig redux	Concentrations	in the mat		S DEIOW J	inches.		pleted matrix	k – Hyune soli.
HYDROLO	GY							
Wetland Hy	drology Indicator	s:						
Primary Indic	cators (minimum o	one require	ed; check all that app	oly)			Seco	ndary Indicators (2 or more required)
Surface	Water (A1)		✓ Water-St	ained Leav	/es (B9) ( <b>e</b>	xcept	V	Vater-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)			1, 2, 4A,				4A, and 4B)
✓ Saturatio			Salt Crus				<u> </u>	Drainage Patterns (B10)
Water M	larks (B1)		Aquatic I	nvertebrate	es (B13)		C	Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydroger					Saturation Visible on Aerial Imagery (C9)
Drift Dep	posits (B3)		Oxidized	Rhizosphe	eres along	Living Roo	ots (C3) 🖌 G	Geomorphic Position (D2)
🖌 Algal Ma	at or Crust (B4)		Presence	of Reduc	ed Iron (C4	1)	S	Shallow Aquitard (D3)
🖌 Iron Dep	posits (B5)		Recent Ir	on Reduct	ion in Tille	d Soils (C6	i) F	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted of	or Stressed	d Plants (D	1) ( <b>LRR A</b> )	) F	Raised Ant Mounds (D6) (LRR A)
Inundati	on Visible on Aeria	l Imagery (E	37) Other (Ex	plain in Re	emarks)		F	Frost-Heave Hummocks (D7)
Sparsely	y Vegetated Conca	ve Surface	(B8)					
Field Obser	vations:							
Surface Wat	er Present?	Yes	No 🖌 Depth (i	nches):		_		
Water Table	Present?	Yes	No 🖌 Depth (i	nches):		_		
Saturation P	resent?	Yes 🖌	No Depth (i	nches): 6		Wetla	and Hydrolog	y Present? Yes <u>√</u> No
(includes cap								
Describe Re	coraea Data (strea	im gauge, m	nonitoring well, aeria	pnotos, p	revious ins	pections),	ii available:	
Remarks:								
iron deposits	s/sheen observe	d in standi	ng puddles near p	oint. Man	y drainad	e patters	in the area.	
iron deposits	s/sheen observe	d in standi	ng puddles near p	oint. Man	y drainag	e patters	in the area.	

#### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site:Questa Tailings Pipeline Removal Project	_ City/County:	Sampling Date:5/10/2018
Applicant/Owner: Chevron	State: NM	Sampling Point:Q-5b
Investigator(s): Erik Schmude, Tony Kupilik	_ Section, Township, Range:	
Landform (hillslope, terrace, etc.): terrace	Local relief (concave, convex, none):	Slope (%):4-5
Subregion (LRR): LRR E Lat:	Long:	
Soil Map Unit Name: Cumulic haploborolls, nearly level	NWI class	ification: none
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes No (If no, explain in	Remarks.)
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> significant	tly disturbed? Are "Normal Circumstances	s" present? Yes _ ✓ No
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally p	problematic? (If needed, explain any answ	wers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showir	ng sampling point locations, transec	ts, important features, etc.

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes 🖌	No	Is the Sampled Area		
Hydric Soil Present?	Yes	No 🖌	•	X	
Wetland Hydrology Present?	Yes	No 🖌	within a Wetland?	Yes	No <u>✓</u>
Remarks:					

#### **VEGETATION – Use scientific names of plants.**

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30'</u> )		Species?		Number of Dominant Species 4
1. Populus angustifolia	50	yes	FACW	That Are OBL, FACW, or FAC: (A)
2				Total Number of Deminent
3				Total Number of Dominant 5 Species Across All Strata: (B)
4	50			Percent of Dominant Species 80
Sapling/Shrub Stratum (Plot size: 15')	30	= Total Co	ver	That Are OBL, FACW, or FAC: (A/E
1. Alnus incana	50	yes	FACW	Prevalence Index worksheet:
	20			Total % Cover of: Multiply by:
2. Salix bebbiana		yes	FACW	OBL species x 1 =
3. Rosa woodsii	10	no	FACU	FACW species         x 2 =
4				
5	80			FAC species x 3 =
		= Total Co	vor	FACU species x 4 =
Herb Stratum (Plot size: 5')			vei	UPL species x 5 =
1 Agrostis stolonifera	40	yes	FAC	Column Totals: (A) (B)
2. Bromus inermis	40	yes	UPL	
3 Taraxacum officianale	5	no	NL	Prevalence Index = B/A =
	0	110		Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				✓ 2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supportin
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11	05			be present, unless disturbed or problematic.
30' Woody Vine Stratum (Plot size: )	00	= Total Co	/er	
/				
1				Hydrophytic
2				Vegetation Present? Yes <u>√</u> No
% Bare Ground in Herb Stratum 15		= Total Co	/er	
Remarks:				
Remarks.				

Profile Desc	cription: (Describe	to the dep	oth needed to docur	nent the	indicator	or confir	m the absen	ce of indicators.)
Depth (inchoo)	Matrix	0/		x Feature	s Type <sup>1</sup>	Loc <sup>2</sup>	Taxtura	Demortes
<u>(inches)</u> 0-4	Color (moist)	<u>%</u> 100	Color (moist)	%	Type	LOC		Remarks
	10YR 3/2				·		clay loam	
4-6	10YR 7/6	100			·		loam	
6-16	10YR 4/3	99	10YR 5/6	1	С	М	sandy loan	n
					·			
					·			
					·			
1								
	oncentration, D=Depl Indicators: (Application)					d Sand G		Location: PL=Pore Lining, M=Matrix.
Histosol			Sandy Redox (		eu.)			cm Muck (A10)
	pipedon (A2)		Stripped Matrix					ed Parent Material (TF2)
	istic (A3)		Loamy Mucky N		1) (except	MLRA 1		ery Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed					ther (Explain in Remarks)
· ·	d Below Dark Surface	e (A11)	Depleted Matrix				2	
	ark Surface (A12)		Redox Dark Su	. ,				ators of hydrophytic vegetation and
	/lucky Mineral (S1) Gleyed Matrix (S4)		Depleted Dark		-7)			tland hydrology must be present, less disturbed or problematic.
	Layer (if present):		Redux Depless	5015 (FO)				less disturbed of problematic.
Type:								
	ches):						Hydric Se	oil Present? Yes No _✓
Remarks:							inguine et	
Remarko.								
HYDROLO								
Wetland Hy	drology Indicators:							
Wetland Hy Primary India	drology Indicators: cators (minimum of o	ne require					Sec	condary Indicators (2 or more required)
Wetland Hy Primary India Surface	drology Indicators: cators (minimum of or Water (A1)	ne require	Water-Sta	ined Leav		xcept	<u>Sec</u>	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary India Surface High Wa	drology Indicators: cators (minimum of or Water (A1) ater Table (A2)	ne require	Water-Sta MLRA	ined Leav 1, 2, 4A,		xcept	<u>Sec</u>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary India Surface High Wa	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3)	ne require	Water-Sta MLRA Salt Crust	ined Leav <b>1, 2, 4A,</b> (B11)	and 4B)	xcept	<u>Sec</u>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Wetland Hy Primary India Surface High Wa Saturatia Water M	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1)	ne require	Water-Sta MLRA Salt Crust Aquatic In	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate	<b>and 4B)</b> es (B13)	xcept	<u>Sec</u>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimen	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) 1arks (B1) nt Deposits (B2)	ne require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O	and 4B) es (B13) dor (C1)			Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary India Surface High Wa Saturatie Water M Sedimen Drift De	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3)	ne require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F	ined Leav <b>1, 2, 4A</b> , (B11) vertebrate Sulfide O Rhizosphe	es (B13) dor (C1) eres along	Living Ro		Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) 1arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ne require	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce	and 4B) es (B13) dor (C1) eres along ed Iron (C4	Living Ro		Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hy Primary India Surface High Wa Saturatii Water M Sedimed Algal Ma Iron Dep	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) 1arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ne require	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro	ined Leav <b>1, 2, 4A</b> , (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilleo	Living Ro ) d Soils (C	oots (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimen Drift Dep Algal Ma Iron Dep Surface	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ined Leav <b>1, 2, 4A</b> , (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduce • Stressec	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Ro ) d Soils (C	oots (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In	magery (B	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp	ined Leav <b>1, 2, 4A</b> , (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduce • Stressec	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Ro ) d Soils (C	oots (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave	magery (B	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp	ined Leav <b>1, 2, 4A</b> , (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduce • Stressec	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Ro ) d Soils (C	oots (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsel	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations:	magery (B Surface (	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Stunted or Other (Exp (B8)	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce of Reduce Stressec blain in Re	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilleo I Plants (D emarks)	Living Ro ) d Soils (C 1) ( <b>LRR /</b>	oots (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )
Wetland Hy Primary India Surface High Wa Saturatie Water M Sedimen Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Wat	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: er Present?	magery (B Surface (	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or 57) Other (Exp (B8)	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct Stressec blain in Re ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Ro ) d Soils (C 1) ( <b>LRR</b> )	oots (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimen Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Water Water Table	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: present? Ye	magery (B Surface ( es es	Water-Sta     MLRA     Salt Crust     Aquatic Im     Hydrogen     Oxidized F     Presence     Recent Iro     Stunted or     Stunted or     Stunted or     Stanted or     Stanted or     Depth (in	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce of Reduce Stressec blain in Re ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Ro ) d Soils (C 1) ( <b>LRR</b>	→ bots (C3) (6) A)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Wa Saturatie Water M Sedimen Drift Deg Algal Ma Iron Deg Surface Inundati Sparsele Field Obser Surface Wate Water Table Saturation P (includes ca	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: rer Present? Present? Yeresent Yeresent? Y	magery (B Surface ( es es	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Stunted or Other (Exp (B8) No ✓ Depth (in No ✓ Depth (in	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce of Reduce Stressec blain in Re ches): ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Ro ) d Soils (C 1) (LRR /		Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )
Wetland Hy Primary India Surface High Wa Saturatie Water M Sedimen Drift Deg Algal Ma Iron Deg Surface Inundati Sparsele Field Obser Surface Wate Water Table Saturation P (includes ca	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: rer Present? Present? Ye	magery (B Surface ( es es	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Stunted or Other (Exp (B8) No ✓ Depth (in No ✓ Depth (in	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce of Reduce Stressec blain in Re ches): ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Ro ) d Soils (C 1) (LRR /		Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Wa Saturatie Water M Sedimen Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Wate Vater Table Saturation P (includes ca) Describe Re	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: rer Present? Present? Yeresent Yeresent? Y	magery (B Surface ( es es	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Stunted or Other (Exp (B8) No ✓ Depth (in No ✓ Depth (in	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce of Reduce Stressec blain in Re ches): ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Ro ) d Soils (C 1) (LRR /		Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Wa Saturatie Water M Sedimen Drift Deg Algal Ma Iron Deg Surface Inundati Sparsele Field Obser Surface Wate Water Table Saturation P (includes ca	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial In y Vegetated Concave vations: rer Present? Present? Yeresent Yeresent? Y	magery (B Surface ( es es	Water-Sta MLRA Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Stunted or Other (Exp (B8) No ✓ Depth (in No ✓ Depth (in	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce of Reduce Stressec blain in Re ches): ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Ro ) d Soils (C 1) (LRR /		Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)

#### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site:Questa Tailings Pipeline Removal Project	_ City/County:	Sampling Date:5/10/2018
Applicant/Owner: Chevron	State: NM	
Investigator(s): Erik Schmude, Tony Kupilik	_ Section, Township, Range:	
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, none):	Slope (%):1-2
Subregion (LRR): LRR E Lat:	Long:	Datum:
Soil Map Unit Name: Cumulic haploborolls, nearly levvel	NWI class	ification: none
Are climatic / hydrologic conditions on the site typical for this time of Are Vegetation <u>yes</u> , Soil <u>yes</u> , or Hydrology <u>no</u> significant Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally p	tly disturbed? Are "Normal Circumstances	s" present? Yes 🧹 No
SUMMARY OF FINDINGS - Attach site man showin	na samplina point locations, transec	ts important features etc

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes 🖌	No			
Hydric Soil Present?	Yes	No 🖌	Is the Sampled Area		
Wetland Hydrology Present?	Yes 🖌	No	within a Wetland?	Yes	No <u>√</u>
Remarks:			·		

Point placed a few feet from river edge in area of fairly sparse vegetation, with sphagnum moss the dominant herbaceous species.

#### **VEGETATION – Use scientific names of plants.**

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30'</u> )	<u>% Cover</u> 40	Species?		Number of Dominant Species 3
1. Populus angustifolia		yes	FACW	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant 4
3				Species Across All Strata: (B)
4				Demonst of Dominant Chaption
15'	40	= Total Co	ver	Percent of Dominant Species 75 That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size: 15')	10			Prevalence Index worksheet:
1. Salix amygdaloides	10	yes	FACW	Total % Cover of: Multiply by:
2. Betula occidentalis	10	yes	FACW	
<sub>3.</sub> Acer glabrum	2	no	FACU	OBL species x 1 =
4. Quercus gambelii	2	no	NL	FACW species x 2 =
5.				FAC species x 3 =
	24	= Total Co		FACU species x 4 =
Herb Stratum (Plot size: 5')		10(a) 00	VCI	UPL species x 5 =
1. Agrostis stolonifera	5	no	FAC	Column Totals: (A) (B)
2. Sphagnum spp.	40	yes	NL	Dravalance Index
3. Trifolium repens	3	no	FAC	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
4. Descuriana sp.	1	no	NL	
5. Achillea millefoium	1	no	FACU	1 - Rapid Test for Hydrophytic Vegetation
6. Bromus inermis	2	no	UPL	2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8				. ,
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
30'	<b>FO</b>	= Total Cov	rer	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)				
1				Hydrophytic
2				Vegetation
48		= Total Cov		Present? Yes <u>√</u> No
% Bare Ground in Herb Stratum				
Remarks:				
many and primary variation in the bort access law				
moss spp. primary vegetation in the herbaceous laye	1			

Profile Desc	ription: (Describ	e to the de	oth needed to docu	ment the	indicator	or confir	m the absence	of indicators.)
Depth	Matrix			ox Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3	10YR 6/4	85	7.5YR 6/8	15	С	PL	loamy sand	
3-5	10YR 3/2	85	7.5YR 6/8	15	С	PL	clay	some organics (dark leaves)
5-7	7.5YR 4/3	55	7.5YR 6/8	45	С	Μ	loamy sand	
·							<u> </u>	
							<u> </u>	
							·	
			=Reduced Matrix, C			ed Sand G		cation: PL=Pore Lining, M=Matrix.
-		licable to al	LRRs, unless othe		ted.)			ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	( )		Sandy Redox (					n Muck (A10)
	pipedon (A2)		Stripped Matrix		-1) (avaan			l Parent Material (TF2)
	stic (A3) en Sulfide (A4)		Loamy Mucky Loamy Gleyed			t IVILKA 1		y Shallow Dark Surface (TF12) er (Explain in Remarks)
	d Below Dark Surfa	ace (A11)	Depleted Matri		2)		O	
-	ark Surface (A12)		Redox Dark Su		)		<sup>3</sup> Indicato	ors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark	,	,			and hydrology must be present,
	Bleyed Matrix (S4)		Redox Depres					s disturbed or problematic.
	Layer (if present)	:						
Type: Riv	/er rock							
Depth (in	ches): <u>7</u>						Hydric Soil	Present? Yes No _✓
Remarks:							•	
Redox featu	ires present, but	no depletio	on on the matrix ol	oserved.				
HYDROLO Wetland Hyd	GY drology Indicator	s:						
-			d; check all that app	ly)			Seco	ndary Indicators (2 or more required)
Surface	Water (A1)		Water-Sta	ained Leav	ves (B9) ( <b>e</b>	xcept		Vater-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)			1, 2, 4A,	. , .			4A, and 4B)
Saturatio			Salt Crus		,		C	Prainage Patterns (B10)
	larks (B1)		Aquatic Ir	. ,	es (B13)			Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen					aturation Visible on Aerial Imagery (C9)
	posits (B3)		✓ Oxidized			Livina Ro		Geomorphic Position (D2)
-	at or Crust (B4)				ed Iron (C	-	. ,	hallow Aquitard (D3)
	oosits (B5)				tion in Tille			AC-Neutral Test (D5)
-	Soil Cracks (B6)		Stunted o					aised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	al Imagery (E				, (		rost-Heave Hummocks (D7)
	Vegetated Conca				,			
Field Obser	-		· · ·					
Surface Wat	er Present?	Yes	No 🖌 Depth (ir	nches):				
Water Table			No Depth (ir		nknown	_		
Saturation P			No Depth (ir			Wet	land Hydrolog	y Present? Yes _✓ No
(includes cap	oillary fringe)							,
Describe Re	corded Data (strea	am gauge, m	onitoring well, aerial	photos, p	revious ins	spections)	, if available:	
Remarks:								
Could not di	g below 7" due t	o river rock	. This point appea	ars to be	occasion	ally inun	dated with flow	wing water from stream.

#### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site:Questa Tailings Pipeline Removal Project	City/County:	Sampling Da	ate: 5/10/2018
Applicant/Owner: Chevron	Sta	ate: <u>NM</u> Sampling Po	
Investigator(s): Erik Schmude, Tony Kupilik	Section, Township, Range:		
Landform (hillslope, terrace, etc.): terrace	Local relief (concave, convex, n	one): none	Slope (%):
Subregion (LRR): LRR E Lat:	Long:	[	Datum:
Soil Map Unit Name: Cumulic haploborolls, nearly level		NWI classification: none	1
Are climatic / hydrologic conditions on the site typical for this time o Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> significan Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally	ntly disturbed? Are "Normal C	no, explain in Remarks.) ircumstances" present? Yes plain any answers in Remarks	

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <mark>∕</mark> Yes Yes	No No _✔ No _✔	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

Point placed on terrace elevated slightly above river level, but in riparian vegetation

#### **VEGETATION – Use scientific names of plants.**

20'	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30'</u> )	<u>% Cover</u>	Species?		Number of Dominant Species 1
1. Populus angustifolia	65	yes	FACW	That Are OBL, FACW, or FAC: (A)
2. Abies concolor	10	no	NL	Total Number of Deminent
<sub>3.</sub> Juniperus scoparium	5	no	NL	Total Number of Dominant 4 Species Across All Strata: (B)
4				
	80	= Total Co	ver	Percent of Dominant Species 25 That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size: 15')				、
1. Abies concolor	2	no	NL	Prevalence Index worksheet:
2. Salix exigua	2	no	FACW	Total % Cover of: Multiply by:
3. Holodiscus discolor	5	yes	FACU	OBL species x 1 =
4. Acer glabrum	5	yes	FACU	FACW species <u>67</u> x 2 = <u>134</u>
5. Rosa woodsi	1	no	FACU	FAC species x 3 =
	15	= Total Co	vor	FACU species <u>11</u> x 4 = <u>44</u>
Herb Stratum (Plot size: 5')			vci	UPL species <u>1</u> x 5 = <u>5</u>
1. Clematis occidentalis	5	yes	NL	Column Totals: <u>79</u> (A) <u>183</u> (B)
2. Bromus inermis	1	no	UPL	Prevalence Index = B/A =2.32
3. Acnatherum robustum	1	no	NL	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				$\checkmark$ 3 - Prevalence Index is $\leq 3.0^{1}$
78				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11	-	= Total Cov		be present, unless disturbed or problematic.
30' <u>Woody Vine Stratum</u> (Plot size:)	<u> </u>	= Total Cov	/er	
1				Hydrophytic
2				Vegetation
		= Total Cov		Present? Yes ✓ No
% Bare Ground in Herb Stratum		= 10tal C0		
Remarks:				•
Populus angustifolia dominated riparian area				
r opulus angustitolia uominateu npanan area				

SOIL	
------	--

Profile Des	cription: (Describe	to the dep	oth needed to docu	ment the	indicator	or confir	m the absence	e of indicators.)		
Depth	Matrix			ox Feature		. 2				
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		Remarks		
0-2	10YR 2/2	100					loam	mostly organic		
2-12	10YR 4/2	98	7.5YR 6/8	2	С	Μ	sandy			
		- <u> </u>								
					- <u> </u>					
	Concentration, D=Dep					d Sand G		ocation: PL=Pore Lining, M=Matrix.		
-	Indicators: (Applic	able to al			ed.)			ors for Problematic Hydric Soils <sup>3</sup> :		
Histoso	( )		Sandy Redox					m Muck (A10)		
	pipedon (A2)		Stripped Matrix	. ,				d Parent Material (TF2)		
	listic (A3)			amy Mucky Mineral (F1) (except MLRA 1)				Very Shallow Dark Surface (TF12)		
	en Sulfide (A4)			Loamy Gleyed Matrix (F2)				ner (Explain in Remarks)		
	ed Below Dark Surfac	e (A11)	Depleted Matrix (F3)				3			
Thick Dark Surface (A12)			Redox Dark Surface (F6)					ors of hydrophytic vegetation and		
			<u> </u>	Depleted Dark Surface (F7)				wetland hydrology must be present,		
	Gleyed Matrix (S4)		Redox Depres	sions (F8)			unle	ss disturbed or problematic.		
Type: ro	Layer (if present):									
	nches): <u>12"</u>						Hudria Sai	il Present? Yes No∕		
	iches): <u>12</u>						Hydric Sol			
Remarks:										
HYDROLC										
-	drology Indicators									
Primary Indi	icators (minimum of o	one require	d; check all that app	ly)			Seco	ondary Indicators (2 or more required)		
	e Water (A1)		Water-Sta	ained Leav	ves (B9) ( <b>e</b>	xcept		Water-Stained Leaves (B9) (MLRA 1, 2,		
High W	ater Table (A2)		MLRA	1, 2, 4A,	and 4B)			4A, and 4B)		
Saturat	ion (A3)		Salt Crus	t (B11)			I	Drainage Patterns (B10)		
Water N	/larks (B1)		Aquatic Ir	nvertebrate	es (B13)		I	Dry-Season Water Table (C2)		
Sedime	ent Deposits (B2)		Hydroger	Sulfide O	dor (C1)		:	Saturation Visible on Aerial Imagery (C9)		
Drift De	posits (B3)		Oxidized	Rhizosphe	eres along	Living Ro	ots (C3)	Geomorphic Position (D2)		
Algal M	at or Crust (B4)		Presence	of Reduce	ed Iron (C4	4)		Shallow Aquitard (D3)		

- \_\_\_\_ Shallow Aquitard (D3)
  - \_\_\_\_ FAC-Neutral Test (D5)
  - \_\_\_\_ Raised Ant Mounds (D6) (LRR A)
  - Frost-Heave Hummocks (D7)

Inundation Visible on Aerial Imagery (B7)		y (B7)	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)	
Sparsely Vegetated Co	ncave Surfa	ce (B8)				
Field Observations:						
Surface Water Present?	Yes	No	$\checkmark$	Depth (inches):		
Water Table Present?	Yes	No	$\checkmark$	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes	No	√	_ Depth (inches):	Wetland Hydrology Present? Yes No	✓
Describe Recorded Data (st	ream gauge	e, monitoi	ing	well, aerial photos, previous inspec	tions), if available:	
Remarks:						

Recent Iron Reduction in Tilled Soils (C6)

Stunted or Stressed Plants (D1) (LRR A)

\_\_\_\_ Iron Deposits (B5)

\_\_\_\_ Surface Soil Cracks (B6)

APPENDIX B

PHOTOGRAPH LOG





Photo 1.



Photo 2.





Photo 4.



Photo 5.



Photo 6. Flicker Nest







Photo 8.





Photo 10. 4<sup>th</sup> Red River Crossing



Photo 11.

Photo 9.



Photo 12.



Photo 13.



Photo 14.





Photo 16.

Photo 15.



Photo 17.



Photo 18.



Photo 19.



Photo 20a. 3rd Red River Crossing



Photo 20b. 3rd Red River Crossing



Photo 21. 2<sup>nd</sup> Red River Crossing (Thunder Bridge)



Photo 21a. 2<sup>nd</sup> Red River Crossing (Thunder Bridge)



Photo 21b. 2<sup>nd</sup> Red River Crossing (Thunder Bridge)



Photo 22a. 1<sup>st</sup> Red River Crossing



Photo 22b. 1st Red River Crossing



Photo 23a.



Photo 23b.



Photo 24.



Photo 25.



Photo 26. Culvert Crossing – Bat Roost



Photo 27.



Photo 28a. Culverts Under Road



Photo 28b.





Photo Q-1.

Photo 29.





Photo Q-2

Photo Q-3a. Non-hydric Soil





Photo Q-3b. General Area

Photo Q-3a.



Photo Q-3b. Toward River



Photo Q-3b Under Trestle – Away From River



Photo Q-4. Non-hydric Soil (Chroma greater than 2)



Photo Q-4a





Photo Q-4b.

Photo Q-5a. Iron Deposits





Photo Q-5a

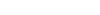


Photo Q-5a. PSS Wetland



Photo Q-5b. Non-hydric Coil (High Chroma)



Photo Q-5b.





Photo Q-6b

Photo Q-6a.



**USFWS OFFICIAL SPECIES LIST** 

APPENDIX C



# United States Department of the Interior

FISH AND WILDLIFE SERVICE New Mexico Ecological Services Field Office 2105 Osuna Road Ne Albuquerque, NM 87113-1001 Phone: (505) 346-2525 Fax: (505) 346-2542 <u>http://www.fws.gov/southwest/es/NewMexico/</u> http://www.fws.gov/southwest/es/ES\_Lists\_Main2.html



April 06, 2018

In Reply Refer To: Consultation Code: 02ENNM00-2018-SLI-0619 Event Code: 02ENNM00-2018-E-01355 Project Name: Questa Tailings Pipeline Removal

# Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design.

#### FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action will have "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

2

If you determine that your proposed action may affect federally-listed species, consultation with the Service will be necessary. Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a) (2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take "after-the-fact." For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

The scope of federally listed species compliance not only includes direct effects, but also any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects that may occur in the action area. The action area includes all areas to be affected, not merely the immediate area involved in the action. Large projects may have effects outside the immediate area to species not listed here that should be addressed. If your action area has suitable habitat for any of the attached species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts.

#### **Candidate Species and Other Sensitive Species**

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico state agencies. These lists, along with species information, can be found at the following websites:

Biota Information System of New Mexico (BISON-M): www.bison-m.org

New Mexico State Forestry. The New Mexico Endangered Plant Program: www.emnrd.state.nm.us/SFD/ForestMgt/Endangered.html

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: nmrareplants.unm.edu

Natural Heritage New Mexico, online species database: nhnm.unm.edu

#### WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, www.fws.gov/wetlands/Data/Mapper.html integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

#### **MIGRATORY BIRDS**

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's Migratory Bird Office. To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern at website www.fws.gov/ migratorybirds/CurrentBirdIssues/Management/BCC.html to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction.

#### **BALD AND GOLDEN EAGLES**

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at www.fws.gov/midwest/eagle/guidelines/bgepa.html.

On our web site www.fws.gov/southwest/es/NewMexico/SBC\_intro.cfm, we have included conservation measures that can minimize impacts to federally listed and other sensitive species. These include measures for communication towers, power line safety for raptors, road and highway improvements, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

We also suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State fish, wildlife, and plants.

4

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please call 505-346-2525 or email nmesfo@fws.gov and reference your Service Consultation Tracking Number.

Attachment(s):

Official Species List

# **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Mexico Ecological Services Field Office 2105 Osuna Road Ne Albuquerque, NM 87113-1001 (505) 346-2525

## **Project Summary**

Consultation Code:	02ENNM00-2018-SLI-0619
Event Code:	02ENNM00-2018-E-01355
Project Name:	Questa Tailings Pipeline Removal
Project Type:	** OTHER **
Project Description:	The proposed project entails demolition of a decommissioned mill tailings pipeline and ancillary structures associated with the Questa MIne. The tailings pipeline was constructed to transport mill tailings, as a slurry, from the mine to the Tailings Facility. The tailings pipeline begins approximately 7 miles east of the Village of Questa, NM, at the Questa Mine, parallels Highway 38, down the Red River Canyon, through the Village of Questa, NM, terminating at the Tailings Facility. The majority of the tailings pipeline was constructed on property owned by Chevron (CEMC) and the USFS (see Figure 10). A portion of the pipeline crosses private property. The pipeline crosses Red River, Columbine Creek (a tributary to the Red River), Embargo Ditch, and unnamed ditches (see Table 1). Structures associated with the pipeline will also be removed, including the Lower Dump Sump and support buildings, three old bridges, and two elevated trestles. The pipeline and associated above ground structures will be removed from the Questa Mine to the Tailings Facility.

#### Project Location:

Approximate location of the project can be viewed in Google Maps: <u>https://</u> www.google.com/maps/place/36.69288813708551N105.49927318090664W



Counties: Taos, NM

## **Endangered Species Act Species**

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

#### Mammals

NAME	STATUS
Canada Lynx Lynx canadensis	Threatened
Population: Wherever Found in Contiguous U.S.	
There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.	
Species profile: https://ecos.fws.gov/ecp/species/3652	
<ul> <li>New Mexico Meadow Jumping Mouse Zapus hudsonius luteus</li> <li>There is final critical habitat for this species. Your location is outside the critical habitat.</li> <li>This species only needs to be considered under the following conditions: <ul> <li>If project affects dense herbaceous riparian vegetation along waterways (stream, seep, canal/ditch).</li> </ul> </li> <li>Species profile: <a href="https://ecos.fws.gov/ecp/species/7965">https://ecos.fws.gov/ecp/species/7965</a></li> </ul>	Endangered

### Birds

NAME	STATUS
Mexican Spotted Owl <i>Strix occidentalis lucida</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <u>https://ecos.fws.gov/ecp/species/8196</u>	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <u>https://ecos.fws.gov/ecp/species/6749</u>	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is <b>proposed</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <u>https://ecos.fws.gov/ecp/species/3911</u>	Threatened

## **Critical habitats**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX D

#### URS QUESTA REMOVAL ACTION WETLAND ASSESSMENT REPORT



REPORT

# QUESTA REMOVAL ACTION WETLAND ASSESSMENT REPORT

## **REVISION 1**

Prepared for Chevron Mining Inc. Questa, New Mexico

June 28, 2013



URS Corporation 8181 E. Tufts Avenue Denver, CO 80237

Project No. 22242831

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# ACRONYMS

APD	Approved Jurisdictional Determination
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMI	Chevron Mining, Inc.
CWA	Clean Water Act
EDC	Eastern Diversion Channel
E.O.	Executive Order
EPA	Environmental Protection Agency (United States)
ERL	Eagle Rock Lake
GPS	Global positioning system
HTS	Historic Tailing Spills
mg/kg	Milligram per kilogram
Ν	North
NRCS	Natural Resource Conservation Service
OW	Other water
PCB	Polychlorinated biphenyls
PEM	Palustrine Emergent
PFO	Palustrine Forested
PJD	Preliminary Jurisdictional Determination
PSS	Palustrine Scrub-shrub
R	Range
RA	Removal Action
RI/FS	Remedial Investigation/Feasibility Study
SOW	Statement of Work
Т	Township
URS	URS Corporation
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
W	West
WUS	Waters of the United States

The Chevron Questa Mine, which is owned and operated by Chevron Mining Inc. (CMI), includes an active underground molybdenum mine, a milling facility, a historic open pit, and waste rock piles. The Questa Mine encompasses approximately three square miles of land located 3.5 miles east of the village of Questa, New Mexico. The Questa Mine property also includes tailing disposal impoundments (Tailing Facility) covering approximately 2 square miles of land located west of the village of Questa.

The Questa Mine site was the focus of the CMI Remedial Investigation/Feasibility Study (RI/FS) (URS 2009a, URS 2009b). The Removal Action (RA) was required by the United States Environmental Protection Agency (EPA) Administrative Settlement Agreement and Order on Consent for Removal Actions, CERCLA Docket No. 06-09-12 and its appended Statement of Work (SOW) (EPA 2012). The RA to be conducted includes:

- Installation of inlet storm water controls at Eagle Rock Lake, removal of sediment from the lake, and on-site disposal of excavated material
- Removal of polychlorinated biphenyl (PCB) –contaminated soil in the Mill Area and offsite disposal of the evacuated soil
- Installation of pipe to convey unused irrigation water in the Eastern Diversion Channel (EDC) to prevent infiltration through historic buried tailing
- Removal of historic tailing spill deposits along the Red River riparian area and on-site disposal at the Tailing Facility.

The RA work to be accomplished in compliance with the SOW has the potential to impact wetlands and surface water features. This Wetland Assessment Report discusses the regulatory framework, substantive requirements, methodology, and results of wetland delineations within areas subject to RA. The report does not include the analysis of impacts and mitigation strategies to avoid and minimize any impacts to wetlands, or to compensate for wetland impacts that cannot be minimized by other methods. Project Specific Technical Memorandum addressing impacts and mitigation will be submitted under separate cover. This report was prepared by URS Corporation (URS) on behalf of Chevron Environmental Management Company (CEMC).

#### 1.1 REMOVAL ACTION

Three RA areas were considered in this report. These include the Historic Tailing Spills (HTS) Deposits (Tailing Spill Deposits), Eagle Rock Lake, and Eastern Diversion Channel. The RA areas are located near the Village of Questa, Taos County, New Mexico (Appendix A, Figure 1) and can be found on the Questa United States Geological Survey (USGS) 7.5-minute topographic quadrangle map (USGS 1963) within Township (T) 29 North (N), Range (R) 12 West (W), Sections 25 and 36 (Eastern Diversion Channel), and T 28 N, R 13 W (Eagle Rock Lake and HTS). Eagle Rock Lake is located along Highway 38, east of Questa. The Eastern Diversion Channel is located within the Questa Mine Tailing Facility, adjacent to the west of Questa.

The tailing spill deposit sites occur at various locations along the tailing pipeline between the mill and the Tailing Facility. The tailing pipeline is 9 miles long, but most of the sites are

located in the first 2.5 miles below the mill. The senior wetland delineator was part of the field team that initially identified the HTS sites in 2002, and subsequently re-visited the HTS sites in 2010, 2011, 2012, and 2013. Based on these previous field visits, only one of the HTS sites was considered to have a potential to be a wetland, Tailing Spill Deposit 1, and was included in the wetland delineation field work. All of the other sites are dominated by upland vegetation and have no evidence of wetland hydrology and were not re-visited for the wetland delineation.

Descriptions of activities related to the RA are provided in the respective RA work plans - Historic Tailing Spills RA Work Plan (URS 2012), Eagle Rock Lake RA Work Plan (Arcadis 2012), and Eastern Diversion Channel RA Work Plan (AECOM 2012). At this time, proposed remedial action activities within the Eastern Diversion Channel have not been approved by the EPA.

# 1.2 REGULATORY AUTHORITY

The following provides a summary of applicable regulatory requirements pertinent to wetlands.

#### 1.2.1 Regulatory Requirements

#### Office of Solid Waste Management Response Directive 9280.0-02 (August 1985)

Under the Office of Solid Waste Management Response Directive 9280.0-02, the Environmental Protection Agency (EPA) must meet the substantive requirements of Executive Order (E.O.) 11988 (Floodplain Management Executive Order) and E.O. 11990 (Executive Order for the Protection of Wetlands). The EPA is directed to avoid the short- and long-term destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands when there is a practicable alternative within CERCLA sites.

## **Clean Water Act**

Section 404 of the Clean Water Act (CWA), implemented by the U.S. Army Corps of Engineers (USACE) and EPA, regulates discharges of dredged of fill material into waters of the United States (WUS), including special aquatic sites such as wetlands. Federal regulations promulgated under Section 404 define wetlands as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (33 Code of Federal Regulations [CFR] 328.3(b).) Section 404 also protects a variety of surface waters such as lakes, ponds, streams, and rivers.

In general, response actions selected under CERCLA that involve the discharge of dredge or fill material into waters of the United States or associated areas under CWA Section 404 jurisdiction must meet the substantive requirements of Section 404. RAs must seek to avoid or minimize impacts to WUS whenever practicable, as long as the alternative does not have other significant adverse environmental consequences. When unavoidable impacts to WUS occur, these impacts must be mitigated.

#### New Mexico State Regulations and Guidance

The State of New Mexico does not have state regulations equivalent to the Section 404 permit program operated by the USACE; however, the State reviews 404 projects under CWA Section 401 state certification provisions. An individual state Water Quality Certification is required for discharges to all intermittent, perennial, and wetland surface waters. This program is administered by the Surface Water Quality Bureau of the New Mexico Environment Department.

## 2.1 SITE DESCRIPTION

The Tailing Spill Deposit 1 and Eagle Rock Lake RA areas are located in the Volcanic Mid-Elevation Forests of New Mexico (Griffith et al. 2006). The Volcanic Mid-Elevation Forest ecoregion is a region of mostly Pliocene basaltic lavas with distinct cones of Pliocene composite volcanoes in an area of low mountain ridges, slopes, and outwash fans. Dominant vegetative communities in the region are ponderosa pine (*Pinus ponderosa*) forests with an understory of shrubs and a sparsely vegetated herbaceous stratum.

The Eastern Diversion Channel is located within the Taos Plateau ecoregion (Griffith et al. 2006) and is characterized by a rolling to level plateau with volcanic cones. A dominant feature of the Taos Plateau is the Rio Grande River Gorge and its steep side canyons. The geology of the area comprises Quaternary eolian deposits, colluvium, piedmont and fan alluvium, block-rubble colluvium, and Tertiary (mostly Pliocene) basalt and volcanic rocks. Big sagebrush (*Artemisia tridentata*) is the dominant vegetative community in the ecoregion.

#### 2.1.1 Soils

Soils within the RA areas comprise two dominant types. Sedillo-Silva association, strongly sloping, are loamy-skeletal or fine, mixed, mesic Ustollic Haplargids, consisting of loams, with rooting depths of more than 60 inches. The parent material comprises alluvium derived from igneous and metamorphic rock and eolian material (NRCS 2012). These are the dominant soils within the Eastern Diversion Channel. Cumulic Haplaquolls, nearly level, are the taxonomic type whose parent material is alluvium derived from igneous and metamorphic rock. This soil is classified as predominantly hydric and is found around Eagle Rock Lake and Tailing Spill Deposit 1.

## 2.1.2 Vegetation

General vegetation communities in the study areas include ponderosa pine forest, mixed conifer/riparian forest, sagebrush shrub steppe, wetlands/riparian, and disturbed/barren.

**Ponderosa pine forest** vegetative community occurs at the elevation of Eagle Rock Lake and is dominated by mature ponderosa pine in open stands with an understory of shrubs and herbaceous cover. Typical shrub cover varies from 10 to 40 percent, with approximately 25 percent herbaceous cover. Dominant understory species include smooth brome (*Bromus inermis*), Apache plume (*Fallugia paradoxa*), Rocky Mountain juniper (*Juniperus scopularum*), silvery lupine (*Lupinus argenteus*), Gambel oak (*Quercus gambellii*), skunkbush (*Rhus aromatica*), and Wood's rose (*Rosa woodsii*).

**Mixed conifer/riparian** is the dominant vegetative community around Tailing Spill Deposit 1. Engelmann spruce (*Picea engelmanii*) and narrowleaf cottonwood (*Salix angustifolia*) comprise the dominant tree species. Understory shrub species include Rocky Mountain juniper, smooth brome, Wood's rose, mountain snowberry (*Symphoricarpos oreophilis*), Rocky Mountain maple (*Acer glabrum*), field sagewort (*Artemisia campestris*), fringed sage (*Artemisia frigida*), rubber rabbitbrush (*Ericameria nauseosus*), ninebark (*Physocarpos monogynus*), and intermediate wheatgrass (*Thinopryum intermedium*). Approximately half of the soil cover comprises small rocks and litter. **Sagebrush** (*Artemisia tridentata*) **shrub steppe** communities are dominated by sagebrush and rabbitbrush (*Ericameria nauseosa*), with a sparse understory of grasses and caespitose forbs. These communities may also include pinyon/juniper associations. Portions of the soil surface may be covered with cryptogamic crusts. This is the predominant vegetation community on the slopes of the EDC.

**Wetland/riparian** areas are found within all the RA areas. This vegetative community occurs as two distinct classifications: emergent or marsh dominated, and tree dominated. Emergent wetlands are dominated by sedges (*Carex* spp.), rushes (*Juncus* spp.) and other hydrophytic grasses and forbs. These areas may also support a small percentage of shrub cover. Tree dominated wetlands are dominated by woody species providing about 50 to 75 percent cover, primarily of narrowleaf cottonwood, speckled alder (*Alnus incana*), river birch (*Betula occidentalis*), and sandbar willow (*Salix exigua*). Wetland/riparian areas are discussed in more detail in Section 4, Results.

**Barren/disturbed** areas are the result of human-made disturbance and include two-track and paved roads, buildings, and other structures. These areas may support some weedy or landscape vegetation.

## 2.1.3 Hydrology

The RA areas are located within Hydrologic Unit Code 13020101, the Upper Rio Grande Watershed, that begins at the Colorado/New Mexico border and drains an area of approximately 3,220 square miles (USGS 2010), including 94.79 percent of Taos County (USDA 2008). The largest waterbody associated with the RA areas is the Red River, a perennial stream that originates in the Sangre de Cristo Mountains and forms a confluence with the Rio Grande River southwest of Questa.

## 2.1.4 Wildlife

Dominant life forms in the region include large and small mammals and birds. Wildlife or their signs observed within the RA areas included North American beaver (*Castor canadensis*), elk (*Cervus elaphus*), belted kingfisher (*Ceryle alcyon*), pocket gopher (*Geomys bursarius*), junco (*Junco hyemalis*), mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), and bushtit (*Psaltriparus minimus*).

Study areas were determined by overlaying the Project drawings over aerial photographs and applying a buffer. Buffer widths varied depending on topography. Field maps were created with ESRI<sup>®</sup> ArcGIS<sup>®</sup> software (1 inch equals 200 feet). Pre-field research included the review of National Wetland Inventory maps (USFWS 2012), topographic maps (USGS 1963), and previous environmental reports from the area.

URS ecologists Jeffrey Dawson and Susan Hall walked the RA areas between October 15 and 18, 2012, to delineate wetlands and surface water features. Ambient temperatures averaged between approximately 45 and 70 degrees Fahrenheit. Weather was sunny throughout the delineation period.

Wetland delineations were conducted using the Routine Determination protocol discussed in the *Corps of Engineers Wetland Delineation Manual Technical Report 4-87-1* (Environmental Laboratory 1987) and two supplemental delineation manuals. The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coasts* (Environmental Laboratory 2010) was used within the ponderosa forest and mixed conifer/riparian upland vegetative communities. The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Environmental Laboratory 2008*) was used in the sagebrush shrub steppe upland vegetative community. Delineation field methods included evaluation of dominant plant species and percent cover, digging of a soil pit to observe soil characteristics, and observations of hydrological indicators in the soil pit and on the surface. Standard data sheets were completed for each wetland and a nearby paired upland observation point.

Wetlands were identified in the field as areas having positive evidence of three environmental parameters: hydric soils, wetland hydrology, and greater than five percent hydrophytic vegetation. Some wetlands can be difficult to identify because wetland indicators are missing due to natural processes or recent disturbances. The supplemental delineation manuals include procedures to follow for wetlands that naturally lack indicators and for atypical situations where indicators are absent due to disturbance. Wetland data were recorded on USACE approved individual wetland data forms. Features delineated but subsequently excluded as wetlands were also recorded on data forms.

During field surveys, wetland vegetation was classified using the Cowardin classification system (Cowardin, et al. 1979), a USACE accepted vegetation classification system. Wetlands within the RA areas were classified as Palustrine Emergent (PEM), Palustrine Scrub-shrub (PSS), or Palustrine Forested (PFO), or combinations of these classifications.

PEM wetlands are those aquatic features dominated by herbaceous emergent plants. Plant species commonly found in PEM wetlands in northern New Mexico include cattails (*Typha angustifolia*), sedges (*Carex* spp.), and rushes (*Juncus* spp.). PSS wetlands are those aquatic features dominated by shrubs under 20 feet tall or with trunks or stems less than 3 inches in diameter. Common PSS plant species found in this region include willow (*Salix* spp.), alder (*Alnus* spp.) and small cottonwoods (*Populus* spp.). PFO wetlands are dominated by trees greater than 20 feet high with stems greater than 3 inches in diameter. PFO wetland species composition commonly includes cottonwood, larger willows, and river birch (*Betula occidentalis*). Combinations of these communities may also be present in a wetland.

Surface water features (i.e., streams and ponds) were identified by the presence of a defined bed and bank, evidence of an ordinary high water or bankfull indicator, and less than 50 percent vegetative cover within the bed. Information recorded for each surface water feature included depth and width of the average ordinary high water mark, average bankfull depth, bank slope, substrate composition, source of hydrology, dominant vegetation, other vegetation, percent overstory, and any wildlife or their signs observed.

The boundaries of wetlands and surface water features were recorded using a Trimble<sup>®</sup> submeter hand-held global positioning system (GPS) and photographs were taken of each feature. Unique identifiers were assigned to each feature delineated based on location. For example, the first wetland identified within the Eastern Diversion Channel was assigned a unique identifier of EDC-1. A total of eight aquatic features encompassing approximately 5.9 acres occur within the RA areas. Characteristics of wetland and surface water features are included in Tables 1 and 2 respectively, and are briefly discussed according to RA area below. RA area figures and associated photographs are included in Appendices A and B, respectively. Additional information regarding each wetland and surface water feature is included in the individual data forms in Appendix C.

Type/ Classification	Wetland Identifier	Location (Latitude, Longitude)*	Size (acres)*	Proximity	Figure Number	Photograp h Number
PEM wetland	HTS-2	36.5949/- 105.4958	0.04	Adjacent to Red River	1	2
PEM wetland	ERL-PEM	36.7032/- 105.5730	0.24	Abuts OW-ERL-1	2	4
PFO wetland	ERL-PFO	36.7035/- 105.5727	0.31	Abuts OW-ERL-3	2	6, 7, 8
PEM wetland	EDC-1/ EDC-2	36.7086/- 105.6096, 36.7077/- 105.6099	2.71	Isolated	3	13, 14, 15
PEM/PSS wetland	EDC-3	36.6993/- 105.6195	<0.01	Isolated	4	21
Total Wetlands			3.3			

 Table 1

 Delineated Wetlands in the Removal Action Areas

\* All measurements are approximate.

EDC = Eastern Diversion Channel

ERL = Eagle Rock Lake

HTS = Historic Tailing Spills

 $\mathbf{OW} = \mathbf{Other} \ \mathbf{Water}$ 

PEM = Palustrine Emergent (Cowardin et al. 1979)

PSS = Palustrine Scrub-Shrub (Cowardin et al. 1979)

PFO = Palustrine Forested (Cowardin et al. 1979)

 Table 2

 Delineated Surface Water Features in the Removal Action Areas

Type/ Classification	Surface Water Identifier	Location (Latitude, Longitude)*	Size (lf / acres)*	Flow Frequency	Flows to	Figure Number	Photograph Number
Impoundment	OW-ERL-1	36.7034/- 105.5742	2.42	Perennial	Red River	2	3, 4, 5
Perennial Stream	OW-ERL-2	36.7030/- 105.5751	759 / 0.18	Perennial	Rio Grande	2	9, 10, 11, 12
Ditch	OW-ERL-3	36.7035/- 105.5725	468 / 0.04	Perennial	Eagle Rock Lake	2	7,8
Total Surface Water Features			1,227 / 2.64				

\* All measurements are approximate.

ERL = Eagle Rock Lake

lf = linear feet

OW = Other Water

## 4.1 TAILING SPILL DEPOSITS

One wetland, identified as HTS-2 and totaling 0.04 acre was delineated within Tailing Spill Deposit 1. Wetland HTS-2 is a perched depression that formed between Highway 38 and a two-track road within the Red River riparian buffer. Although much of the feature is barren, a fringe of PEM vegetation is present around the edges of the feature, and dominated by Arctic rush (*Juncus arcticus*).

A second area within Tailing Deposit 1 that supports hydrophytic vegetation was also investigated as a wetland; however, it was determined that this feature did not meet the USACE wetland criteria for hydric soils and lacked evidence of hydrology. The soil pit for this feature (HTS-1) is included on Appendix A, Figure 2 and described in an Individual Wetland Data Form included in Appendix C.

No surface water features were delineated within the Tailing Spill Deposits area. Native soils occurring within the Tailing Spill Deposits area are not listed as hydric by the Natural Resource Conservation Service (NRCS 2012).

## 4.2 EAGLE ROCK LAKE

Eagle Rock Lake was originally a borrow pit for aggregate during the 1950's, used for construction of New Mexico State Highway 38 (Arcadis 2012). Subsequently, the depression was filled with water and a small park was established. The lake is currently maintained by the U.S. Forest Service and is used for recreation including fishing. Water is supplied from the Red River and discharge of water back to the Red River is controlled by outlet culverts.

Two wetlands totaling 0.55 acre and three surface water features totaling approximately 2.64 acres occur within the Eagle Rock Lake RA area. Eagle Rock Lake (OW-ERL-1) and its diversion channel (OW-ERL-3) support both PEM and PFO wetlands in distinct communities. A PEM wetland (ERL-PEM) (0.24 acre), dominated by beaked sedge (*Carex utriculuta*) and aquatic sedge (*Carex aquatilis*) occurs at the eastern edge of the lake. A discontinuous PEM fringe abuts the remainder of the shoreline and comprises redtop (*Agrostis gigantea*), creeping bentgrass (*Agrostis stolonifera*), showy milkweed (*Asclepias speciosa*), Nebraska sedge (*Carex nebrascensis*), orchardgrass (*Dactylis glomerata*), quackgrass (*Elymus repens*), finged willowherb (*Epilobium ciliatum*), knotted rush (*Juncus nodosus*), bog orchis (*Limnorchis* sp.), and narrowleaf cattail (*Typha angustifolia*). Small populations of sandbar willow and park willow (*Salix monticola*) are scattered throughout the feature.

Mature PFO wetlands are generally uncommon in western states, but can be found in the mountains of New Mexico, where they abut perennial streams in the lower reaches of canyons. The PFO wetland ERL-PFO primarily occurs along the Eagle Rock Lake diversion channel (OW-ERL-3) and encompasses 0.31 acre within the Eagle Rock Lake RA area. The wetland is characterized by a mature stand of narrowleaf cottonwood and speckled alder and this mature overstory cover comprises approximately 35 percent of the canopy. Understory shrubs make up approximately 67 percent of cover, and are dominated by narrowleaf cottonwood, speckled alder, sandbar willow and river birch. The herbaceous understory is sparse, evident only in forest openings and edges. Herbaceous species observed include redtop, fringed willow-herb, wintercress (*Barbarea vulgaris*), and reed canarygrass (*Phalaris arundinacea*).

Surface water features delineated within the Eagle Rock Lake RA area include Eagle Rock Lake (OW-ERL-1), the Red River (OW-ERL-2), and the Eagle Rock Lake diversion channel (OW-ERL-3). Eagle Rock Lake is a 2.5 acre manmade pond that is almost completely sustained by a diversion of the Red River, returning flows to the river via a restricted outlet. Water clarity in the lake is poor due to dissolved solids. The lake is used primarily for recreation, although it provides wildlife habitat, including habitat for North American beaver, which maintain a lodge on the north side of the lake. Recent conversations with the USFS indicate that the beaver habitat is undesirable in its current location and has been detrimental to mature vegetation around the lake. The USFS plans to remove the beaver lodge during some planned future work in the Red River stream bed. The Eagle Rock Lake diversion channel (OW-ERL-3) is a straight reach supporting a mature riparian buffer for approximately half its length. Where the channel grade reaches lake elevation, the channel supports a large PFO wetland (ERL-PFO described earlier).

The Red River is a perennial tributary of the Red River. Outside the Eagle Rock Lake RA area, the river maintains a low gradient and slow flows, and supports a mature woody overstory along shallow banks. Riffle-pool-run complexes occur regularly within the river in these reaches. Within the RA area, channel banks are severely downcut with evidence of erosion, flow velocity increases, and the banks are predominantly mature open ponderosa pine with no riparian buffer until the river reaches the western end of the lake. The Red River is not anticipated to be impacted by RA activities.

Native soils occurring within Eagle Rock Lake are listed as hydric by the Natural Resource Conservation Service (NRCS 2012). Soils exhibited a typical matrix hue of 10YR and high oxidized redox concentrations were the most common sign of hydric conditions. Evidence of gleying was only observed in small concentrations.

## 4.3 EASTERN DIVERSION CHANNEL

The Eastern Diversion channel is part of the tailing facility and was constructed in 1975 (AECOM 2012). Modifications were made to the channel over the years; most notably the channel embankments were excavated and used as borrow material for dam raises, which resulted in widening of the channel bottom in certain areas. Historically, the diversion channel was dry except after substantial rainfall, and was observed to be dry during the Remedial Investigations (RI) (2002 - 2004) (URS, 2009a). Beginning in 2004, water began to accumulate in the channel due to flood irrigation practices in the fields east of the tailing facility, and from discharge of unused irrigation water from the Cabresto Creek Ditch Lateral No. 4. The channel typically begins to fill with water in May and water has been observed in the channel throughout the year.

The largest wetland occurs within the Eastern Diversion Channel (EDC-1/EDC-2), totaling 2.71 acres. EDC-1 and EDC-2 were initially separated based on the presence of water and density of vegetation, but were subsequently determined to be part of the same feature. Data were collected to record changes in vegetation composition and other indicators. The wetland covers most of the channel bed. Dominant vegetation includes foxtail barley (*Hordeum jubatum*), narrowleaf cattail), and willow dock (*Rumex salicifolius*), with sandbar willow lining the edges of the channel bed. This feature supports three species of freshwater snail including disk gyro (*Gyraulus circumstriatus*), marsh pond snail (*Lymnaea elodes*), and pygmy fossaria (*Lymnaea parva*). Wetland vegetation is also present within the Eastern Diversion Channel upstream of the delineated area and within a side channel that is separated by a berm.

Inundation, which occurs from the ponding of surface runoff and shallower grades, was observed in EDC-1 but was absent in EDC-2 at the time of the survey. It is likely that EDC-2 is inundated less frequently and/or for shorter periods than EDC-1.

The area immediately down-channel from EDC-1 and EDC-2 was investigated for wetland characteristics. This area is physically separated by a mine road and culverts, which are perched on the upslope side and partially filled with sediment. Although hydrology was observed in two of the five years for which aerial photography is available, this area did not meet the criteria to be delineated as a wetland. The soil pit for this feature (EDC-6) is included on Appendix A, Figure 5 and described in an Individual Wetland Data Form included in Appendix C.

To the south of EDC-6, the bottom of the EDC is much narrower and has little apparent gradient until it drops off steeply. Small to medium sized cottonwoods are common along the bottom of the channel in the level areas but no wetlands or stream channels are present. The steep portion of the channel is mostly rock.

A PEM/PSS wetland (EDC-3) totaling less than 0.01 acre was delineated near the southern end of the Eastern Diversion Channel, on a slope above the lower part the steep portion of the channel. EDC-3 is supported by a small spring that outflows to the Eastern Diversion Channel and wets a small portion of the channel bottom. The channel does not have an ordinary high water mark and the wetland is isolated. Two additional spring-supported wetlands were also observed along the slope of this area outside of the Study Area (Appendix A, Figure 6). The three spring-supported wetlands are located within a grove of cottonwoods and other woody plants.

Hydric soils were not observed in any soil pits within the Eastern Diversion Channel.

## 4.4 WETLAND FUNCTIONAL ASSESSMENT

A wetland functional assessment was not conducted because the areas delineated were either not natural wetlands or did not meet the size requirements of the New Mexico Rapid Assessment Method (Muldavin et al. 2011).

## 4.5 JURISDICTION

The decision in *Rapanos v. United States*, 547 U.S. 715 (2006), and the post-*Rapanos* guidance issued by the USACE and the EPA (2007), addressed the geographic extent of USACE jurisdiction. Under the guidance, traditional navigable waters, perennial or relatively permanent surface water features forming a confluence with a WUS, or features formed as a result of diversions from WUS and returning to WUS would also be considered jurisdictional by the USACE, as would wetlands abutting jurisdictional waterways. Under *Rapanos*, intermittent or ephemeral waterways, their abutting or adjacent wetlands, or wetlands adjacent to WUS are subject to additional review to determine if the feature has a "significant nexus" to a WUS.

As stated previously, CERCLA actions must meet the substantive requirements of other federal environmental laws. As such, Eagle Rock Lake (OW-ERL-1), the Red River (OW-ERL-2), the Eagle Rock Lake diversion channel (OW-ERL-3), and their abutting wetlands (ERL-PEM and ERL-PFO) would be considered USACE jurisdictional aquatic features. Conversely, upland ditches that are excavated wholly in and draining only uplands and without relatively permanent flow are excluded from jurisdiction under the *Rapanos* decision and guidance. Wetland

EDC-1/EDC-2 falls under this category and would not be considered jurisdictional by the USACE. Determining the jurisdiction of wetland HTS-2 based on the USACE criteria is not conclusive; while it is located adjacent to the Red River it is perched above it and has no surface connection to the river.

The USACE defines isolated waters as those that are not traditionally navigable or interstate, including their tributaries, and abutting and adjacent wetlands. Isolated wetlands and surface water features were removed from USACE jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision (*SWANCC v. USACE*, 531 U.S. 159 [2001]). Therefore, wetland EDC-3 would be excluded from USACE jurisdiction.

Please refer to the Project Specific Technical Memorandum prepared to address the impact analysis for each individual removal action project and submitted under separate cover.

Please refer to the Project Specific Technical Memorandum prepared to address mitigation for each individual removal action project and submitted under separate cover.

Five wetlands and three surface water features totaling approximately 3.3 acres were identified and delineated within the RA areas. Of these, approximately 2.99 acres comprise PEM wetland, with approximately 0.31 acre of PFO wetlands present. A total of approximately 2.6 acres, or 1,227 linear feet of surface water features occur within the Eagle Rock Lake RA area. Surface water features include Eagle Rock Lake, the Red River, and the Eagle Rock Lake diversion channel.

CERCLA actions must meet the substantive requirements of other federal environmental laws, including Section 404 regulations. The determination of jurisdiction is a required element of the Section 404 program. Of the aquatic features, Eagle Rock Lake, the Red River, the Eagle Rock Lake diversion channel, and their abutting wetlands would be considered USACE jurisdictional aquatic features. Conversely, wetland EDC-1/EDC-2 would not be considered jurisdictional by the USACE due to its landscape position, construction, and lack of connectivity. EDC-3 would not be considered jurisdictional because it is an isolated feature. Determining the jurisdiction of wetland HTS-2 based on the USACE criteria is not conclusive.

#### References

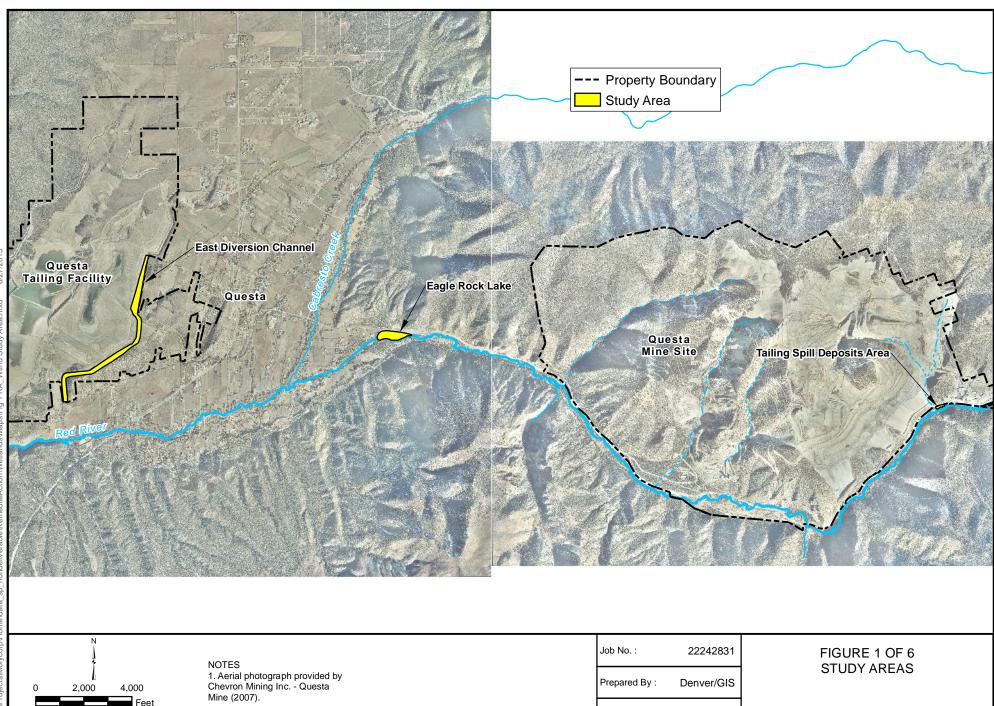
- AECOM. 2012. Eastern Diversion Channel Removal Action Work Plan for the Chevron Questa Mine Superfund Site, Questa, New Mexico. Prepared for Chevron Mining Inc., Questa, New Mexico. June.
- Arcadis. 2012. Final Eagle Rock Lake Removal Action Work Plan. Chevron Questa Mine Superfund Site, Questa, New Mexico. Prepared for Chevron Mining Inc. Questa Mine, Questa, New Mexico. Revision 1. June.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. US Department of the Interior, Fish and Wildlife.
- Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual Technical Report Y-87-1*. Prepared for the US Army Corps of Engineers, Washington, DC. Final Report. January.
- \_\_\_\_\_. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). ERDC/EL TR-08-28. U.S. Army Engineer Research and Development Center, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199. September.
  - \_\_\_\_\_. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coasts (Version 2.0). ERDC/EL TR-10-3. U.S. Army Engineer Research and Development Center, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199. May.
- Environmental Protection Agency (EPA). 1980. Title 40: Protection of Environment Part 230— Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material. 45 FR 85344, Dec. 24, 1980. Available at http://www.epa.gov/owow/wetlands/pdf/40cfrPart230.pdf. Date of last update May 18, 2011. Date accessed November 26, 2012.
  - \_\_\_\_\_. 2012. In re Chevron Mining Inc., Administrative Settlement Agreement and Order on Consent for Removal Actions, Chevron Questa Mine Superfund Site, Questa, New Mexico. CERCLA Docket 06-09-12 CERCLIS ID No. NMD002899094. March 8.
- Griffith, G.E., Omernik, J.M., McGraw, M.M., Jacobi, G.Z., Canavan, C.M., Schrader, T.S., Mercer, D., Hill, R., and B.C. Moran. 2006. *Ecoregions of New Mexico* (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,400,000).
- Muldavin, E.H., B. Bader, E.R. Milford, M. McGraw, D. Lightfoot, B. Nicholson, and G. Larson. 2011. New Mexico Rapid Assessment Method: Montane Riverine Wetlands. Field Guide Version 1.1. Final report to the New Mexico Environment Department, Surface Water Quality Bureau, Santa Fe New Mexico. 39 pp. and appendices.
- Natural Resource Conservation Service (NRCS). 2012. Web Soil Survey. Available at http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm. Date of last update February 17, 2012. Date accessed November 27, 2012.

- United States Department of Agriculture (USDA). 2008. Upper Rio Grande Watershed Hydrologic Unit Code 13020101 Rapid Assessment. Natural Resources Conservation Service, Lakewood, Co. April.
- United States Fish and Wildlife Service (USFWS). 2012a. *National Wetlands Inventory*. Available at: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed on October 12, 2012.
- United States Geological Survey (USGS). 1963. 7.5 Minute Quadrangle: Questa, New Mexico.
- USGS. 2010. Water Resources of the United States. *Boundary Descriptions and Names of Regions, Subregions, Accounting Units and Cataloging Units.* Available at http://water.usgs.gov/GIS/huc\_name.html#Region10. Date of last update July 29, 2010. *Accessed December 22, 2010.*
- URS. 2009a. *Molycorp Remedial Investigation Report. Revision 2.* Prepared for Questa Mine, Chevron Mining Inc. Questa, New Mexico. July.

\_\_\_\_\_. 2009b. *Chevron Mining Inc. Feasibility Study Report, Revision 3.0.* Prepared for Chevron Mining Inc. Questa Mine, Questa, New Mexico. November.

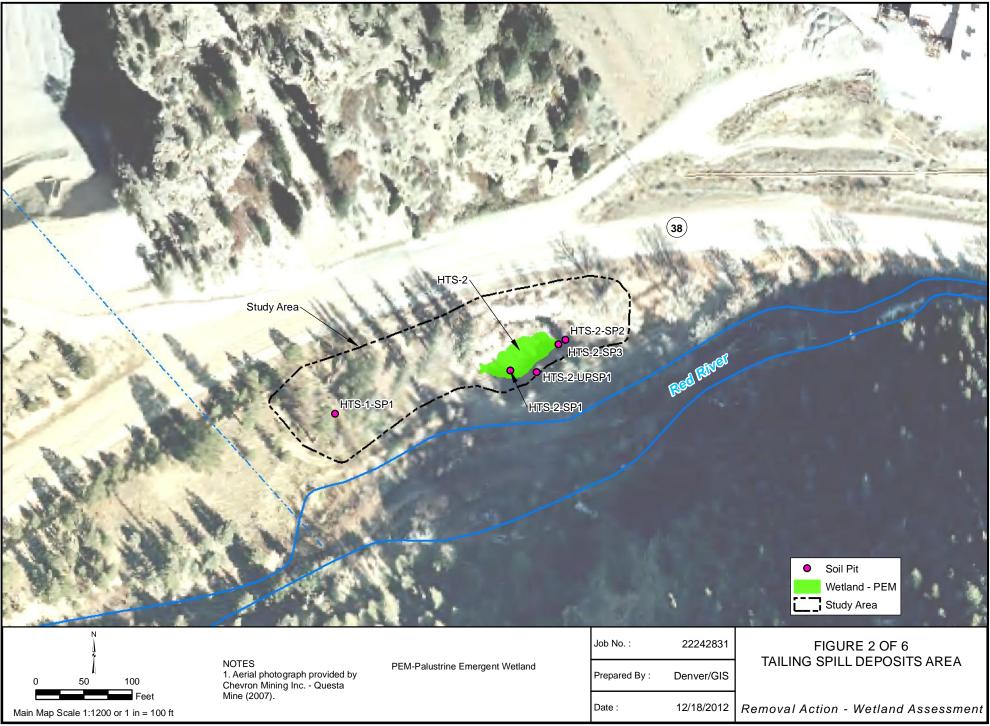
\_\_\_\_\_. 2012. *Historic Tailing Spills Removal Action Work Plan*. Chevron Questa Mine Superfund Site. Prepared for Chevron Mining Inc. Questa Mine, Questa, New Mexico. May.

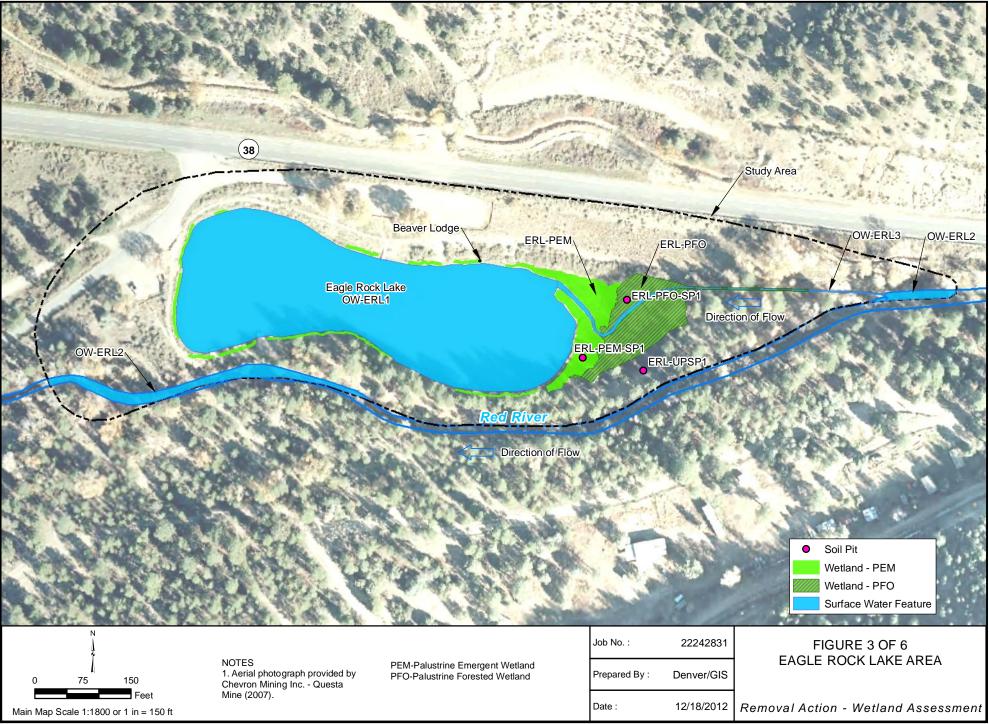
Appendix A Figures

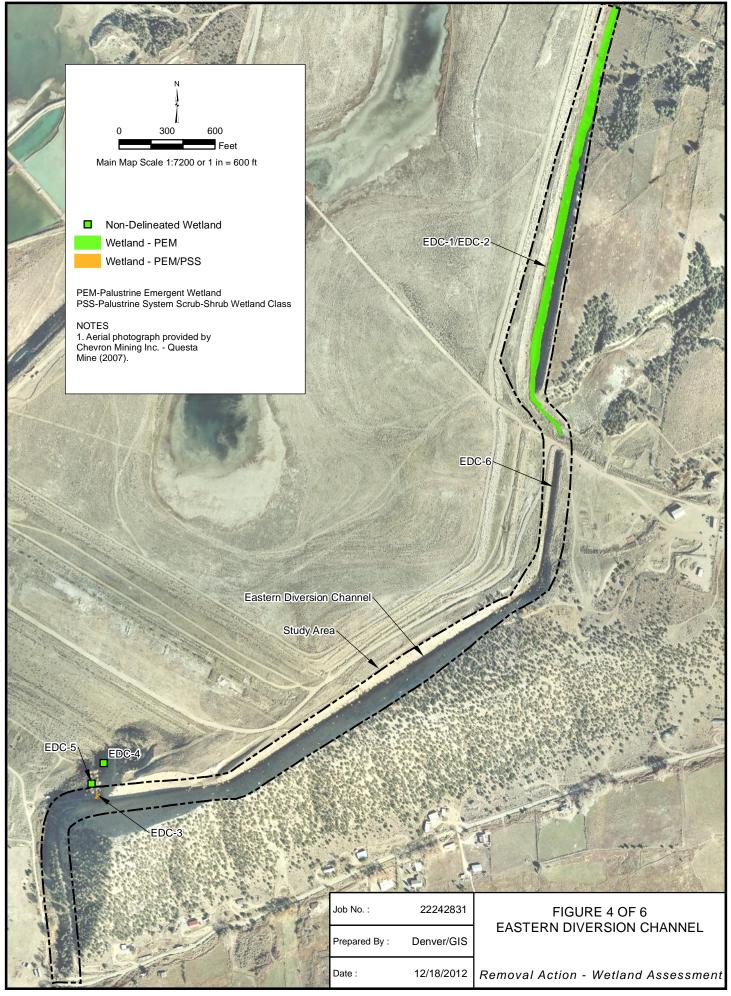


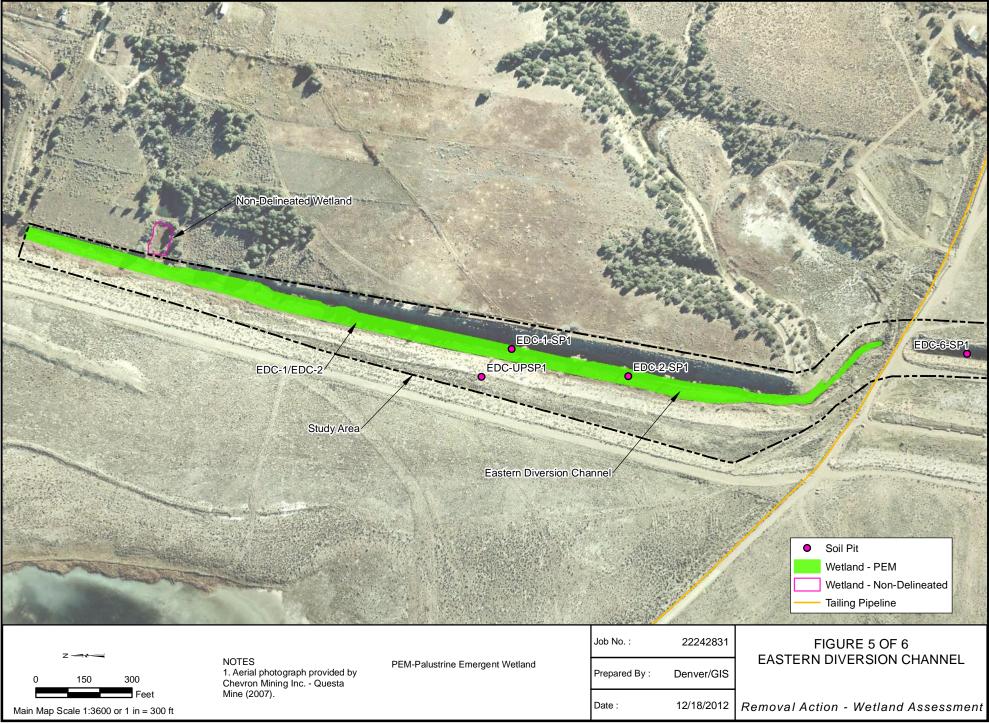
Main Map Scale 1:48,00 or 1 in = 4000 ft

12/18/2012 Removal Action - Wetland Assessment Date :











Appendix B Photographs



Photograph 1. To Southwest. View of feature HTS-1. This area did not meet the three substantive criteria for wetlands.



Photograph 2. To East. View of wetland HTS-2.



Photograph 3. To East. View of Eagle Rock Lake (OW-ERL1).



Photograph 4. To Southeast. View of wetland ERL-PEM at the mouth of the diversion ditch (OW-ERL3). Wetland ERL-PFO can be seen behind the feature. Eagle Rock Lake (OW-ERL1) in foreground.



Photograph 5. To West. Beaver lodge on the north shore of Eagle Rock Lake (OW-ERL1).



Photograph 6. To Northeast. View of wetland ERL-PFO. Wetland ERL-PEM occurs in photograph foreground.



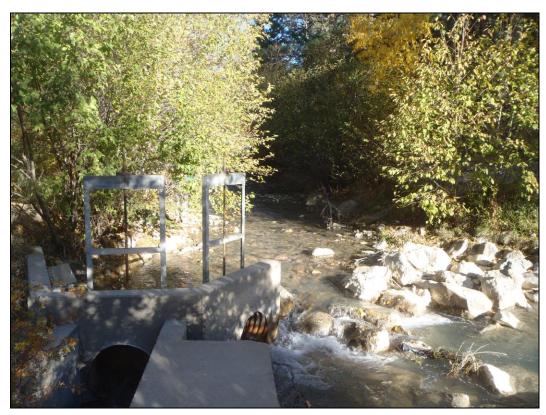


Photograph 7. To West. View of wetland ERL-PFO and Eagle Rock Lake diversion channel (OW-ERL3) near Eagle Rock Lake.



Photograph 8. To West. View of diversion channel OW-ERL3 upstream of wetland ERL-PFO.





Photograph 9. To East. View upstream of Red River (OW-ERL2) at the headgate of the diversion channel (OW-ERL3).



Photograph 10. To South. View of a reach of the Red River (OW-ERL2) adjacent to Eagle Rock Lake (OW-ERL1).



Photograph 11. To South. View of beaver dam within Red River (OW-ERL2) at the western end of the Eagle Rock Lake remediation area.



Photograph 12. To West. View of the Red River (OW-ERL2) downstream of the Eagle Rock Lake remediation area.



Photograph 13. To South. Overview of wetland EDC-1/EDC-2 within the Eastern Diversion Channel remediation area.



Photograph 14. To North. View of wetland EDC-1 within the Eastern Diversion Channel.

# Appendix B Photographs



Photograph 15. To North. View of EDC-2.



Photograph 16. To East. View of upland above Eastern Diversion Channel EDC-1/EDC-2.



Photograph 17. To North. View of feature EDC-6 within the Eastern Diversion Channel. This area did not meet the three substantive criteria for wetlands.



Photograph 18. To East. Overview of the Eastern Diversion Channel and surrounding upland south of feature EDC-6.



Photograph 19. To Southwest. View within the Eastern Diversion Channel below EDC-6.



Photograph 20. To Northeast. View of Eastern Diversion Channel along the channel's lower reach.





Photograph 21. To North. View of wetland EDC-3.



Photograph 22. To Northeast. View of the upland near EDC-3. A portion of the Eastern Diversion lower channel appears in the photograph center.

Appendix C Individual Wetland Data Forms

Project/Site: Questa Mine Remedia	tion Removal Ac	tion	City/Coun	ty: Questa/	Taos	Sar	npling Date	: 10-15-12	2
Applicant/Owner: Chevron Mining,	Inc.				State:NM	Sar	npling Point	: HTS-1	
nvestigator(s): J. Dawson/ S. Hall			Section, T	<sup>r</sup> ownship, Ra	inge: T28N				
Landform (hillslope, terrace, etc.): Dep	pression		Local reli	ef (concave,	convex, none): No	one	S	lope (%): 1	:1
Subregion (LRR): MLRA 39 - Arizona a	•	Lat: 36	.694758		Long: -105.4964			tum: NAD	
Soil Map Unit Name: Cumulic Hapl						lassificatior			
Are climatic / hydrologic conditions on	•		aar? Ves (	No (					
		significantly			"Normal Circumsta			No No	$\cap$
	Hydrology	0 ,							U
<b>,</b> <u> </u>	Hydrology	naturally pr			eeded, explain any				
SUMMARY OF FINDINGS - A	Attach site map	showing	ı sampliı	ng point le	ocations, trans	sects, im	portant f	eatures,	etc.
Hydrophytic Vegetation Present?	Yes 💿	No 🔿	Ist	the Sampled	d Area				
Hydric Soil Present?	Yes 🔿	No 💿		thin a Wetla		s ()	No 💿		
Wetland Hydrology Present?	Yes 🔿	No 💿							
Remarks: Feature lies between	Hy. 38 and the Re	ed River. F	eature ma	y have esta	blished under con	nditions th	nat no long	er exist. F	PEM/
PSS vegetation present	nt; no evidence of	f hydric soi	ls or hydr	ology. Feat	ture perched and	receives r	unoff from	ı road. PS	SS
portion almost barren	understory. Soil	sample yie	lded 1 pot	tential conc	entration, likely	oxidized t	ailings.		
/EGETATION - Use scientified	c names of pla	nts.							
Tree Stratum Plot size: 30 x 30		Absolute % Cover	Dominan Species?	t Indicator Status	Dominance Tec	t worksho	<b></b>		
1. Populus angustifolia		5	Yes	FACW	Dominance Tes				
2.			105		That Are OBL, F.	ACW, or FA	ÂĊ	2	<i>.</i>
3.					(excluding FAC-)	):		3	(A)
4.					Total Number of Species Across			4	(B)
		5	= Total Co	ver	Percent of Domin		2	+	(D)
Sapling/Shrub Stratum Plot size:	30 x 30	5			That Are OBL, F.			(5.0 % (	A/B)
1. Salix monticola		10	Yes	OBL	Danalan a la da				
2. Salix exigua		5	No	FACW	Prevalence Inde			- I I	
3. Salix lucida		5	No	FAC	Total % Cov		<u>iviuiti</u> x 1 =	<u>ply by:</u> 12	
4. Betula occidentalis		5	No	FACW	OBL species FACW species	12 29	x 1 = x 2 =	58	
5. Cornus sericea			No	FACW	FAC species	29 5	x 2 =	15	
Herb Stratum Plot size 30 x 30		29	= Total Co	ver	FACU species	40	x 4 =	160	
1. Bromus inermis		40	Yes	FACU	UPL species	40	x 5 =	100	
2. Juncus arcticus		$-\frac{+0}{14}$	Yes	FACW	Column Totals:	89	(A)	260	(B)
3. Agrostis stolonifera			No	FACW		07	(//)	200	(2)
4. Artemisia frigida			No	Not Listed	Prevalence	e Index = B	/A =	2.92	
5. Carex nebrascensis			No	OBL	Hydrophytic Ve	-			
6. Achnatherum perplexum		1	No	Not Listed	1 - Rapid Te	-		etation	
7. Thinopyrum intermedium		1	No	Not Listed	X 2 - Dominar X 3 - Prevalen				
8.					4 - Morpholo			vide suppo	rtina
9.					data in R	emarks or o	on a separa		
10.					5 - Wetland				、
Woody Vine Stratum Plot size:		60	= Total Co	ver	Problematic				
1.					be present, unle	ess disturbe	d or probler	natic.	
2.					Hydrophytic			~	
			= Total Co	ver	Vegetation Present?	Yes 🧿	No	$\bigcirc$	
% Bare Ground in Herb Stratum	40 %								
Remarks: Distinct Salix/ Juncus		liv roots in	the top of	v inches					
Minors include Elymu					Vicia americana	Poasn			
Two pair of juncos obs									

Profile Desc Depth	ription: (Describ Matrix	e to the de	pth neede		ment the i		or confirm	the absend	ce of ir	idicators.)	
(inches)	Color (moist)	%	Color	(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Rem	arks
<u>SP1/0 - 5</u>	10YR 5/2	99	7.51	(R 5/8	1	С	M	Sa		Some organic str	reaking
5 - 14	10YR 6.5/1	100		-				Ash sar	nd /	Tailings	
SP2/0 - 1	10YR 3/2	50		-	-			Sa		Some organic str	reaking
SP2/0 - 1	10YR 6.5/1	50		-				Sa			
1 - 14	10YR 6.5/1	100		-				Ash sar	nd '	Tailings	
<sup>1</sup> Type: C=Cor	centration, D=Deplet	tion, RM=Red	uced Matrix	, CS=Cover	ed or Coate	d Sand Grai	ins		:	<sup>2</sup> Location: PL=Pore Li	ning, M=Matrix
	ndicators: (Applic	able to all L						Indicator	rs for P	roblematic Hydric S	oils <sup>3</sup> :
Histosol	( )			andy Redo					n Muck	. ,	
	pipedon (A2)			Stripped Ma	. ,	(54) (ave				t Material (TF2)	_ / _ /
	istic (A3) en Sulfide (A4)			•	/ed Matrix	• • •	ept MLRA1		-	ow Dark Surface (T	F12)
	d Below Dark Surfa	ace (A11)		Depleted M		(ГZ)			er (Exp	lain in Remarks)	
	ark Surface (A12)				(Surface (I	-6)					
	/lucky Mineral (S1)	1			ark Surface					of hydrophytic vege	
	Bleyed Matrix (S4)			•	ressions (F	. ,				/drology must be pr turbed or problemat	
Restrictive I	ayer (if present):								000 010		
Type:								Hydric Sc	oil Pres	ent? Yes 🔿	No 🖲
Depth (inc	thes):										
	· · · · · · · · · · · · · · · · · · ·	4 . C	L	•••••		N t .	· · · · · · · · · · · · · · · · · · ·	CD1 1			Della Car
Remarks: Lo	ow chroma resul	ts from co.	lor of tall	ings, not		. vegeta	tion at pit	$\therefore$ SP1 - Dat	rren. 3	SP2 - Juncus arct	icus. Reduction
										soil pit. Likely ox	idized tailings.
A	dditional soil pit	s dug in ar	ea with r	esuits sin	mar to SP	2. Asn sa	and is a pi	uiverized i	nateria	ål.	
HYDROLO	GV										
1	drology Indicator	¢.									
-	tors (minimum of one		eck all that a	apply)				Seco	ondary Ir	ndicators (minimum of	two required)
Surface	Water (A1)			Water-Sta	ined Leave	es (B9) ( <b>ex</b>	cept		Water-S	Stained Leaves (B9	) (except
High Wa	ter Table (A2)			MLRA 1,	2, 4a, and	4b)	•		MLRA	1, 2, 4a, and 4b)	
Saturatio				Salt Crust	t (B11)				-	ge Patterns (B10)	
	larks (B1)			Aquatic Ir	nvertebrate	s (B13)				ason Water Table (	
	nt Deposits (B2)			Hydrogen	Sulfide Oo	dor (C1)				ion Visible on Aeria	I Imagery (C9)
	posits (B3)			Oxidized	Rhizosphe	res on Livi	ng Roots (			rphic Position (D2)	
	at or Crust (B4)				of Reduce	•	,			Aquitard (D3)	
	oosits (B5)						d Soils (C6	· 旦		eutral Test (D5)	
	Soil Cracks (B6)		Ц				1) ( <b>LRR A</b> )			Ant Mounds (D6) (	,
	on Visible on Aeria	•••	·	Other (Ex	plain in Re	marks)			Frost-F	leave Hummocks (I	J7) ( <b>LRR F</b> )
Field Obser	Vegetated Conca	ive Surface	(B8)								
Surface Wat		Yes 🔿	No 💿	Depth (ir	achoo).						
Water Table		Yes ()	No (	Depth (ir	·		Wetla	and Hydrold	oav Pre	esent?Yes 🔿	No 💿
Saturation P		Yes ()	No 💿	Depth (ir	· ·			ina nyaron	9911		
(includes cap	oillary fringe)				·						
	corded Data (strea	im gauge, m	onitoring	well, aerial	photos, pr	evious ins	pections), i	f available:			
None.											
Remarks: Co	oncrete runoff co	onveyance	from roa	dway sloj	pes to the	site. Site	is perche	ed above R	ed Riv	ver and restricted	by a two-track
roa	d. Surveyors ha	ave never s	een wate	r in the fe	eature.						

Project/Site: Questa Mine Remediation Remo	val Action	City/Cour	nty:Questa/T	aos	Sar	mpling Date	: 10-16-1	2
Applicant/Owner: Chevron Mining, Inc.		-		State:NM	Sar	npling Point	t: HTS-1-	UP
nvestigator(s): J. Dawson/S. Hall		Section,	Township, Ra	nge: T28N R13E				
_andform (hillslope, terrace, etc.): Hillslope		Local reli	ief (concave,	convex, none): Hil	lslope	S	lope (%):	25
Subregion (LRR): MLRA 39 - Arizona and New Mex	ico Mts. I at· 36	.694872		Long: -105.4957	1		tum: NAL	
Soil Map Unit Name: Cumulic Haploborolls, n					assification			
·	•							
Are climatic / hydrologic conditions on the site typi						,	~	$\sim$
Are Vegetation Soil or Hydrology	significantly			'Normal Circumstar			No	O
Are Vegetation Soil or Hydrology	naturally pr	oblematic?	? (If ne	eded, explain any	answers in	Remarks.)		
SUMMARY OF FINDINGS - Attach sit	e map showing	g sampli	ng point lo	ocations, trans	ects, im	portant f	eatures,	, etc.
Hydrophytic Vegetation Present? Yes	No 💿	Is	the Samplec	Area				
Hydric Soil Present? Yes	No 🖲		thin a Wetla			No 🖲		
Wetland Hydrology Present? Yes	No 💿				$\sim$			
Remarks: Upland soil pit for HTS-1 and H	ITS-2. Pit located	1 on south	side slope	of HTS-2.				
			1					
VEGETATION - Use scientific names	of plants.							
Tree Streture Distainer 30 x 30	Absolute		Indicator					
Tree Stratum Plot size: 30 x 30	<u>% Cover</u>		<u>Status</u>	Dominance Tes				
1. <u>Picea engelmanii</u>		Yes	FAC	Number of Domir That Are OBL, F/	hant Specie ACW, or FA	es AC		
2. Populus deltoides	5	Yes	FAC	(excluding FAC-)	:		2	(A)
3. Juniperus scopularum	1	No	Not Listed	Total Number of				
4				Species Across A	All Strata:		6	(B)
Sapling/Shrub Stratum Plot size: 30 x 30	8	= Total Co	ver	Percent of Domir That Are OBL, F			33.3 %	(A/B)
1. Symphoricarpos oreophilis	5	Yes	Not Listed				5.5 %	(700)
2. Acer glabrum	3	Yes	FACU	Prevalence Inde	x workshe	eet:		
3. Ericameria nauseosus	1	No	Not Listed	Total % Cov	er of:	Multi	iply by:	-
4. Physocarpos monogynus	1	No	UPL	OBL species		x 1 =	0	
5. Rosa woodsii	1	No	FACU	FACW species		x 2 =	0	
20 20	11	= Total Co	ver	FAC species	10	x 3 =	30	
Herb Stratum Plot size 30 x 30				FACU species	19	x 4 =	76	
1. Artemisia campestris	25		Not Listed	UPL species	41	x 5 =	205	
2. Bromus inermis	15	Yes	FACU	Column Totals:	70	(A)	311	(B)
3. <i>Thinopryum intermedium</i>	13	No	Not Listed	Prevalence	Index = B	/A =	4.44	
4. Artemisia frigida	1	No	Not Listed	Hydrophytic Ve			7.77	
5. Antennaria sp.	1	No	Not Listed	1 - Rapid Te	-		etation	
6				2 - Dominan	-			
7				3 - Prevalence	ce Index is	≤3.0 <sup>1</sup>		
8				4 - Morpholo				orting
9.				data in Re		on a separa	ite sheet)	
10.				Problematic			n <sup>1</sup> (Explain	1)
Woody Vine Stratum Plot size:	55	= Total Co	over	<sup>1</sup> Indicators of hyd		•		
1.				be present, unle				
2.				Hydrophytic				
		= Total Co	ver	Vegetation Procent2	Yes C	No	$igodoldsymbol{igo$	
% Bare Ground in Herb Stratum 45 %				Present?				
- /0		af 41 - D	1D:					Da
Remarks: Plot located on a terrace within th ground comprised of little and sn		of the Re	u Kiver. Ir	ee strata occurs w	unin obv	ious uplar	iu areas.	ыare
ground comprised of fittle and sn	Iall TOCKS.							

Profile Dese Depth	cription: (Descril Matrix		pth neede		<b>nent the</b> < Feature:		or confirm	the absence of	indicators.)
(inches)	Color (moist)	%	Color	(moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 6	10YR 3/4	100		-	-			Si	Many roots, organic mottles
6 - 14	10YR 5/3	100		-	-			GrSi	
					·				
					·				
					·				
					·				
					·				
<sup>1</sup> Type: C=Co	ncentration, D=Deple	tion RM=Rec	uced Matrix	CS=Covere	d or Coate	d Sand Gra			<sup>2</sup> Location: PL=Pore Lining, M=Matrix
	ndicators: (Appli							Indicators for	Problematic Hydric Soils <sup>3</sup> :
Histoso				andy Redox	-			2 cm Muc	-
	pipedon (A2)			tripped Ma	• •				ent Material (TF2)
	istic (A3)			oamy Muck	. ,	l (F1) <b>(exc</b>	ept MLRA		llow Dark Surface (TF12)
	en Sulfide (A4)		L	oamy Gleye	ed Matrix	(F2)		Other (Ex	plain in Remarks)
<u> </u>	d Below Dark Sur	face (A11)		epleted Ma	• • •				
	ark Surface (A12)	<b>`</b>		edox Dark		,		<sup>3</sup> Indicator	s of hydrophytic vegetation and
	Mucky Mineral (S1 Gleyed Matrix (S4)			epleted Da edox Depre		( )		wetland l	hydrology must be present,
						0)		unless di	isturbed or problematic.
	_ayer (if present)							Hydria Sail Dra	esent? Yes 🔿 No 💿
Type: Depth (in	chee):								
	· · · · · · · · · · · · · · · · · · ·	Cail ait 2	£	<u>6</u>	- <u>- 1170</u>	2			
	o soil indicators						tation at	nit. Dogo wood	sii, Bromus inermis, Artemisia
	impestris.				JISUUCU	on. vege		pit. Rosa woods	sii, Bronius merniis, Artennisia
CI.	unpesuis.								
HYDROLO	GY								
	drology Indicato	rs:							
Primary Indica	tors (minimum of on	e required; ch	eck all that a	pply)				Secondary	Indicators (minimum of two required)
Surface	Water (A1)			Water-Stair			cept		-Stained Leaves (B9) (except
High Wa	ater Table (A2)			MLRA 1, 2	2, 4a, and	l 4b)			A 1, 2, 4a, and 4b)
Saturati	( )			Salt Crust	. ,				age Patterns (B10)
	larks (B1)			Aquatic Inv	vertebrate	es (B13)		·	eason Water Table (C2)
	nt Deposits (B2)			Hydrogen					ation Visible on Aerial Imagery (C9)
	posits (B3)			Oxidized F	•		0		orphic Position (D2)
	at or Crust (B4)			Presence		•	,		w Aquitard (D3)
·	oosits (B5) Soil Cracks (B6)			Recent Iron Stunted or				· 🗆	Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria	al Imagony (I	27)	Other (Exp			1) (LKK A)		Heave Hummocks (D7) (LRR F)
	Vegetated Conc					Jinanio)			
Field Obser	3		(20)						
Surface Wat	er Present?	Yes 🔿	No 💿	Depth (in	ches):				
Water Table	Present?	Yes 🔿	No 💿	Depth (in	ches):		Wetla	and Hydrology P	resent? Yes 🔿 No 💿
Saturation P		Yes 🔿	No 💿	Depth (in	ches):				
	pillary fringe)			vall aarial			nactions)	if available:	
None.	corded Data (strea	ani yauye, n		vell, aeriai j	priotos, pi	evious ins	pections),	ii avaliable.	
	o hudrolo-i- in	liantara							
Rendiks. N	o hydrologic ind	neators.							

Project/Site: Questa Mine Remediation Remov	al Action	City/Cour	nty: Questa/	Taos	Sar	npling Date:	10-16-1	2
Applicant/Owner: Chevron Mining, Inc.		-		State:NM	Sar	npling Point:	HTS-2	
Investigator(s): J. Dawson/S. Hall		Section,	Township, Ra	ange: T28N R13E				
Landform (hillslope, terrace, etc.): Depression		Local rel	ief (concave,	convex, none): None	;	SI	ope (%): ]	:1
Subregion (LRR): MLRA 39 - Arizona and New Mexic	co Mts. Lat <sup>.</sup> 36	.694878		Long: -105.49581			um: NAI	
Soil Map Unit Name: Cumulic Haploborolls, ne				NWI clas				
Are climatic / hydrologic conditions on the site typic	•	oar? Vos	No (					
	_							
	significant	-		"Normal Circumstance			) No	$\bullet$
Are Vegetation Soil or Hydrology	naturally p	roblematic	? (If n	eeded, explain any an	swers in	Remarks.)		
SUMMARY OF FINDINGS - Attach site	map showing	g sampli	ng point l	ocations, transe	cts, im	portant fe	eatures,	etc.
Hydrophytic Vegetation Present? Yes	No O		the Semple					
Hydric Soil Present? Yes			the Sampleo			No 🔿		
Wetland Hydrology Present? Yes					C			
Remarks: Barren depression with herbaceo	us/woody fringe	near HTS	S-1. Feature	lies between road a	and Red	River in h	istoric ta	ilings
spill area. Feature perched above								
road likely older than 50 years. S	Some tailings in	barren po	rtion of the	feature.				
VEGETATION - Use scientific names o	f plants.							
Tree Stratum Plot size: 30 x 30	Absolute		t Indicator					
1. Populus angustifolia	<u>% Cover</u> 5	Yes	<u>Status</u> FACW	Dominance Test v				
2.		105	TACW	Number of Domina That Are OBL, FAC				
3.				(excluding FAC-):			2	(A)
4.				Total Number of Do			2	<b>(D)</b>
·	5	= Total Co		Species Across All			2	(B)
Sapling/Shrub Stratum Plot size:	5		Wei	Percent of Dominal That Are OBL, FAC			0.0 %	(A/B)
1							010 /0	( )
2				Prevalence Index			- 1 1	
3				Total % Cover OBL species	01:	iviuitip x 1 =	oly by: 0	
4				FACW species	22	x 1 = x 2 =	44	
5				FAC species	22	x 3 =	0	
Herb Stratum Plot size 30 x 30		= Total Co	over	FACU species		x 4 =	0	
1. Juncus arcticus	18	Yes	FACW	UPL species		x 5 =	0	
2. Agrostis stolonifera	4	No	FACW	Column Totals:	22	(A)	44	(B)
3.								
4.				Prevalence Ir			2.00	
5				Hydrophytic Vege			etation	
6				× 2 - Dominance	-		clation	
7				× 3 - Prevalence				
8				4 - Morphologi				orting
9				data in Rem		on a separat	e sheet)	
10				Problematic Hy			1 (Explain	)
Woody Vine Stratum Plot size:	22	= Total Co	over	<sup>1</sup> Indicators of hydri	c soil an	d wetland h	ydrology i	
1.				be present, unless	disturbe	d or problen	natic.	
2.				Hydrophytic Vogetation		<b>N</b> I - 4		
		= Total Co	over	Vegetation Y Present?	es 🖲	) No (	$\cup$	
% Bare Ground in Herb Stratum $78~\%$				I				
Remarks: A substantial portion of the wetlar	nd is a sparsely w	regetated	depression.	Wetland vegetatio	n neares	st to barren	area is d	lead/
blackened.	1	<b>C</b>	•	6				
Minors include Artemesia campes	tris, Betula occi	dentalis, H	Rosa woods	ii, Salix exigua, Sal	ix mont	icola.		
Deer tracks and scat observed.								

Depth	Describ Matrix	-	th needed to docu Redo	ment the i			the absence of i	ndicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>SP1/0 - 6</u>	5Y 8/3	70	7.5YR 6/8	30	С	M	Si	Tailings
	-		10YR 5/3	2	RM	M	Cl	One area
<u>SP1/6 - 18</u>	10YR 5.5/3.5	55	7.5YR 5/8	5	С	Μ	Cobbly GrLo	High sand content, native soil
			7.5YR 5/6	40	С	Μ	-	
SP2/0 - 6	10YR 5/3	100	-	-			SiLo	
SP2/6 - 9	_	_	_				Cobbles	
$\frac{SP2/9}{SP2/9 - 16}$	10YR 5/3	100	_				GrLo	
<sup>1</sup> Type: C=Cond	centration, D=Deplet	ion, RM=Redu	ced Matrix, CS=Cover	ed or Coate	d Sand Graii	าร		<sup>2</sup> Location: PL=Pore Lining, M=Matrix
Hydric Soil In	dicators: (Applica	able to all LR	Rs, unless otherwis	e noted.)			Indicators for F	Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redo	x (S5)			2 cm Muc	
	ipedon (A2)		Stripped Ma	· · ·				nt Material (TF2)
Black His			Loamy Muc	-		ept MLRA		low Dark Surface (TF12)
	n Sulfide (A4) Below Dark Surfa	00 (111)	Loamy Gley		(F2)		Other (Exp	plain in Remarks)
	rk Surface (A12)	ace (ATT)	X Depleted M	• •	F6)			
	ucky Mineral (S1)		Depleted Da					s of hydrophytic vegetation and
	leyed Matrix (S4)		Redox Dep	ressions (F	8)			ydrology must be present, sturbed or problematic.
Restrictive L	ayer (if present):							
Туре:							Hydric Soil Pre	sent? Yes 💿 No 🔿
Depth (incl	nes):							
SP at 4	3 - 0-4: Matrix - 4 inches. Atypic	-10YR 6/2	oots. Mottles in ta 75%; Redox 7.5Y aay be fill. Only S	r 5/8. 25	5%; RC, C	C; PL, M	. Tailings, root r	natter. Restrictive layer of cobble
HYDROLOG								
-	rology Indicators ors (minimum of one		k all that apply)				Secondary	Indicators (minimum of two required)
Surface V	Vater (A1)		Water-Sta		es (B9) ( <b>ex</b>	cept	Water-	Stained Leaves (B9) (except
	er Table (A2)			2, 4a, and	4D)			A 1, 2, 4a, and 4b)
Saturatio			Salt Crust		a (D12)			ige Patterns (B10) eason Water Table (C2)
	t Deposits (B2)		·	vertebrate	. ,			tion Visible on Aerial Imagery (C9)
	osits (B3)				res on Livi	na Roots (	<u> </u>	orphic Position (D2)
	or Crust (B4)				ed Iron (C4	-	`´ <u>́</u>	w Aquitard (D3)
Iron Depo	osits (B5)				ons in Tille		6) 🔀 FAC-I	Neutral Test (D5)
Surface S	Soil Cracks (B6)		Stunted o	r Stressed	Plants (D1	) (LRR A)	) 🗌 Raise	d Ant Mounds (D6) ( <b>LRR A</b> )
Inundatio	n Visible on Aeria	I Imagery (B7	') 🗌 Other (Ex	plain in Re	emarks)		Frost-	Heave Hummocks (D7) (LRR F)
	Vegetated Conca	ve Surface (E	38)					
Field Observ		V (	Danth (in					
Surface Wate			No  Depth (ir	·	-	Woth	and Hydrology Pr	resent? Yes 💿 No 🔿
Saturation Pro			No (  Depth (ir  No (  Depth (ir		-	vveu	and Hydrology Fr	esent? res 💌 No 🖯
(includes cap	illary fringe)			·	-			
Describe Rec None.	orded Data (strea	m gauge, mo	nitoring well, aerial	photos, pr	evious insp	pections),	if available:	
	1	1	C. D. L.	121				1
	served saturated	i mua at sui	nace. Kain occui	iieu 5 day	's prior. A	nea appe	ars to conect Wa	ater due to topographic position.

Soil Map Unit Name:       Cumulic Haplaquolls, nearly level         Are climatic / hydrologic conditions on the site typical for this time of         Are Vegetation       Soil       or Hydrology       significal         Are Vegetation       Soil       or Hydrology       naturally         SUMMARY OF FINDINGS -       Attach site map showing         Hydrophytic Vegetation Present?       Yes       No         Hydric Soil Present?       Yes       No         Wetland Hydrology Present?       Yes       No         Remarks:       PEM wetland fringe abutting Eagle Rock Laked discontinuous wetland fringe of approximately north side of lake.	36.7 of yeantly y proc ing	Local relie 703224 ear? Yes ( disturbed? oblematic? samplir samplir ust wit	No ( No ( Are (If n ng point la the Sampled hin a Wetla	"Normal Circumstances"   eeded, explain any answe ocations, transects d Area and? Yes (•) ad occurs at mouth of d	eation:_] Remarks present <sup>2</sup> ers in Re , <b>impc</b> No	Datu None ) ? Yes (•) emarks.) ortant fe o () n channe	ope (%): <u>1</u> um: <u>NAI</u> No p <b>atures</b> ;	1 D83
Landform (hillslope, terrace, etc.): Floodplain Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts. Lat: Soil Map Unit Name: Cumulic Haplaquolls, nearly level Are climatic / hydrologic conditions on the site typical for this time of Are Vegetation Soil or Hydrology rignificat Are Vegetation Soil or Hydrology naturally SUMMARY OF FINDINGS - Attach site map showid Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.	36.7 of yeantly y proc ing	Local relie 703224 ear? Yes ( disturbed? oblematic? samplir samplir ust wit	No ( No ( Are (If n ng point la the Sampled hin a Wetla	convex, none): Concave Long: -105.572951 NWI classifie (If no, explain in F "Normal Circumstances" eeded, explain any answe ocations, transects d Area and? Yes (•)	cation:_] Remarks present <sup>2</sup> ers in Re , <b>impc</b> No	Datu None ) ? Yes (•) emarks.) ortant fe o () n channe	no No	083
Landform (hillslope, terrace, etc.): Floodplain         Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts.       Lat:         Soil Map Unit Name:       Cumulic Haplaquolls, nearly level         Are climatic / hydrologic conditions on the site typical for this time of Are Vegetation       Soil or Hydrology signification         Are Vegetation       Soil or Hydrology naturally         SUMMARY OF FINDINGS - Attach site map showin         Hydrophytic Vegetation Present?       Yes ● No ○         Hydric Soil Present?       Yes ● No ○         Remarks:       PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.	of ye antly y pro ing	703224 ear? Yes ( disturbed? oblematic? samplir Is t wit argest par	No ( Are (If n ng point l he Sampled hin a Wetla t of wetlan	Long: -105.572951 NWI classifie (If no, explain in F "Normal Circumstances"   eeded, explain any answe ocations, transects d Area and? Yes (•)	cation:_] Remarks present <sup>2</sup> ers in Re , <b>impc</b> No	Datu None ) ? Yes (•) emarks.) ortant fe o () n channe	no No	083
Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts.       Lat:         Soil Map Unit Name:       Cumulic Haplaquolls, nearly level         Are climatic / hydrologic conditions on the site typical for this time of Are Vegetation       Soil       or Hydrology       signification         Are Vegetation       Soil       or Hydrology       naturally         SUMMARY OF FINDINGS - Attach site map showing       Hydrophytic Vegetation Present?       Yes       No         Hydrophytic Vegetation Present?       Yes       No       Constrained         Hydrophytic Vegetation Present?       Yes       No       Constrained         Remarks:       PEM wetland fringe abutting Eagle Rock Laked discontinuous wetland fringe of approximately north side of lake.	of ye antly y pro ing	703224 ear? Yes ( disturbed? oblematic? samplir Is t wit argest par	No ( Are (If n ng point l he Sampled hin a Wetla t of wetlan	Long: -105.572951 NWI classifie (If no, explain in F "Normal Circumstances"   eeded, explain any answe ocations, transects d Area and? Yes (•)	cation:_] Remarks present <sup>2</sup> ers in Re , <b>impc</b> No	Datu None ) ? Yes (•) emarks.) ortant fe o () n channe	no No	083
Soil Map Unit Name:       Cumulic Haplaquolls, nearly level         Are climatic / hydrologic conditions on the site typical for this time of         Are Vegetation       Soil       or Hydrology       significal         Are Vegetation       Soil       or Hydrology       naturally         SUMMARY OF FINDINGS -       Attach site map showin         Hydrophytic Vegetation Present?       Yes       No         Hydric Soil Present?       Yes       No         Wetland Hydrology Present?       Yes       No         Remarks:       PEM wetland fringe abutting Eagle Rock Laked discontinuous wetland fringe of approximately north side of lake.	of ye antly y pro ing	ar? Yes ( disturbed? bblematic? samplir samplir us t wit	Are (If n ing point la the Sampled hin a Wetla t of wetlan	NWI classifie (If no, explain in F "Normal Circumstances" eeded, explain any answe ocations, transects d Area and? Yes (•) ad occurs at mouth of d	emarks present <sup>2</sup> ors in Re , impo No No	None A.) ? Yes (•) emarks.) ortant fe o () n channe	No Patures,	0
Are climatic / hydrologic conditions on the site typical for this time of Are Vegetation Soil or Hydrology significat Are Vegetation Soil or Hydrology naturally SUMMARY OF FINDINGS - Attach site map showing Hydrophytic Vegetation Present? Yes No C Hydric Soil Present? Yes No C Wetland Hydrology Present? Yes No C Remarks: PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.	antly y pro ing	disturbed? bblematic? samplir samplir us t wit	Are (If n ing point la the Sampled hin a Wetla t of wetlan	(If no, explain in F "Normal Circumstances"   eeded, explain any answe ocations, transects d Area and? Yes (•) d occurs at mouth of d	emarks present <sup>2</sup> ors in Re , impo No No	.) ? Yes (•) emarks.) ortant fe o () n channe	atures,	
Are Vegetation Soil or Hydrology signification Soil or Hydrology naturally Are Vegetation Soil or Hydrology naturally <b>SUMMARY OF FINDINGS - Attach site map showi</b> Hydrophytic Vegetation Present? Yes No C Hydric Soil Present? Yes No C Wetland Hydrology Present? Yes No C Remarks: PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.	antly y pro ing	disturbed? bblematic? samplir samplir us t wit	Are (If n ing point la the Sampled hin a Wetla t of wetlan	"Normal Circumstances"   eeded, explain any answe ocations, transects d Area and? Yes (•) ad occurs at mouth of d	oresent <sup>2</sup> ors in Re , <b>impc</b> No iversio	Yes () emarks.) ortant fe o () n channe	atures,	
Are Vegetation Soil or Hydrology naturally SUMMARY OF FINDINGS - Attach site map showi Hydrophytic Vegetation Present? Yes No C Hydric Soil Present? Yes No C Wetland Hydrology Present? Yes No C Remarks: PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.	y pro ing	samplir samplir Is t wit	(If n ng point la the Sampled hin a Wetla t of wetlan	eeded, explain any answe ocations, transects d Area and? Yes (•) ad occurs at mouth of d	rs in Re , impc Na iversio	emarks.) ortant fe o () n channe	atures,	
SUMMARY OF FINDINGS - Attach site map showi         Hydrophytic Vegetation Present?       Yes       No       O         Hydric Soil Present?       Yes       No       O         Wetland Hydrology Present?       Yes       No       O         Remarks:       PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.	ing	samplir Is t wit	ng point l he Sampled hin a Wetla t of wetlan	ocations, transects d Area and? Yes (•) ad occurs at mouth of d	, impo Na	ortant fe		, etc.
Hydrophytic Vegetation Present?       Yes       No       C         Hydric Soil Present?       Yes       No       C         Wetland Hydrology Present?       Yes       No       C         Remarks:       PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.       No       C	) ) ) ) 2 fe	Is t wit	he Sampled hin a Wetla t of wetlan	d Area and? Yes (•) ad occurs at mouth of d	N	• () n channe		, etc.
Hydric Soil Present?       Yes       No       C         Wetland Hydrology Present?       Yes       No       C         Remarks:       PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.       No       C	) e. La y 2 fe	wit argest par	hin a Wetla	And? Yes (•) ad occurs at mouth of d	iversio	n channe		
Hydric Soil Present?       Yes       No       C         Wetland Hydrology Present?       Yes       No       C         Remarks:       PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.       No       C	) e. La y 2 fe	wit argest par	hin a Wetla	And? Yes (•) ad occurs at mouth of d	iversio	n channe		
Wetland Hydrology Present?       Yes       No       C         Remarks:       PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.       No       C	e. La 7 2 fe	argest par	t of wetlan	nd occurs at mouth of d	iversio	n channe		
Remarks: PEM wetland fringe abutting Eagle Rock Lake discontinuous wetland fringe of approximately north side of lake.	7 2 fe							
discontinuous wetland fringe of approximately north side of lake.	7 2 fe						l with	
north side of lake.			U	1		aver iou		ved o
/ECETATION lies scientific names of plants								
/EGETATION - Use scientific names of plants.								
Absolu			Indicator					
Tree Stratum Plot size: % Cov	/er	Species?	Status	Dominance Test work	sheet:			
1				Number of Dominant S That Are OBL, FACW,				
2				(excluding FAC-):		-	2	(A)
3				Total Number of Domir	ant			
4				Species Across All Stra	ata:	2	2	(B)
Sapling/Shrub Stratum Plot size:	=	= Total Cov	/er	Percent of Dominant S		10	0.0	
1.				That Are OBL, FACW,	or FAC:	10	0.0 %	(A/B)
2				Prevalence Index wor	ksheet			
3.				Total % Cover of:		Multip	ly by:	-
4.				OBL species	53	x 1 =	53	
5.				FACW species	31	x 2 =	62	
0.25	=	= Total Cov	/er		16	x 3 =	48	
Herb Stratum Plot size 0.25 acre				FACU species		x 4 =	0	
1. Carex aquatilis 25		Yes	FACW	UPL species		x 5 =	0	
2. Agrostis gigantea 10		No	FAC	Column Totals: 1	00	(A)	163	(B)
3. Carex utriculata 50		Yes	OBL	Prevalence Index	= B/A	=	1.63	
4. Agrostis stolonifera 3		No	FACW	Hydrophytic Vegetation	on India	cators:		
5. Ascelpias speciosa16. Carex nebrascensis3		No	FAC	1 - Rapid Test for	Hydropl	nytic Vege	tation	
6. Carex nebrascensis37. Eleocharis palustris3		No No	FACW OBL	X 2 - Dominance Te				
N: Eleocharis palustris58. Phleum pratense5				× 3 - Prevalence Ind				
9.		No	FAC	4 - Morphological / data in Remark				rting
10.				5 - Wetland Non-V			,	
100	) =	= Total Cov	/er	Problematic Hydro				
Woody Vine Stratum Plot size:				<sup>1</sup> Indicators of hydric so be present, unless dis				must
1							alic.	
2				Hydrophytic Vegetation Yes		No(		
	=	= Total Cov	/er	Present?	$\sim$			
% Bare Ground in Herb Stratum %				I				

#### SOIL

# Sampling Point: <u>ERL-PEM</u>

Depth (inches)	Matrix Color (moist)	%	Color (moist)	<u>x Features</u> %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
				_				
0 - 3	10YR 4/2		2.5/5B	$-\frac{2}{10}$		<u>M</u>	Cl	
0-3	-		7.5YR 4/6	10	C	<u>M</u>	Cl	
3 - 4	10YR 7/6	60	10YR 5/8	40	C	<u>M</u>	Cl	
4 - 7	10YR 4/2	60	7.5 YR 5/4	40	C	M	Cl	
7 - 15	5Y 7/3	40	10YR 5/6	30	C	Μ	Cl	Many tiny roots
7 - 15	-		10YR 7/6	30	C	M	ClSi	
<sup>1</sup> Type: C=Co	ncentration, D=Depleti	on, RM=Redu	uced Matrix, CS=Cover	ed or Coate	d Sand Grai	ins		<sup>2</sup> Location: PL=Pore Lining, M=Matrix
Hydric Soil	Indicators: (Applica	ble to all LF	Rs, unless otherwis	e noted.)			Indicators for	Problematic Hydric Soils <sup>3</sup> :
Histoso	l (A1)		Sandy Redo	x (S5)			2 cm Mu	ck (A10)
Histic E	pipedon (A2)		Stripped Ma	atrix (S6)			Red Pare	ent Material (TF2)
Black H	listic (A3)		Loamy Muc	ky Mineral	(F1) (exc	ept MLRA	1) 🗍 Verv Sha	allow Dark Surface (TF12)
Hydrog	en Sulfide (A4)		Loamy Gley	-		•		(plain in Remarks)
	ed Below Dark Surfa	ce (A11)	X Depleted M		()			
	ark Surface (A12)		Redox Dark		F6)			
	Mucky Mineral (S1)		Depleted D	```	,			s of hydrophytic vegetation and
	Gleyed Matrix (S4)		Redox Dep		( )			hydrology must be present, isturbed or problematic.
estrictive	Layer (if present):							
Туре:							Hydric Soil Pr	esent? Yes 💿 No 🔿
Depth (in	ches):							
V	egetation at pit -	Carex utri	rulata					
YDROLC	GY drology Indicators	:						
Primary Indica	ators (minimum of one	required; che	ck all that apply)				Secondary	Indicators (minimum of two required)
	Water (A1) ater Table (A2)		Water-Sta MLRA 1,	ined Leave 2, 4a, and		cept		r-Stained Leaves (B9) ( <b>except</b> A 1, 2, 4a, and 4b)
X Saturati			Salt Crust		,		Drain	age Patterns (B10)
	/larks (B1)			vertebrate	e (B13)			eason Water Table (C2)
	nt Deposits (B2)			Sulfide O				ation Visible on Aerial Imagery (C9)
							<u> </u>	norphic Position (D2)
	posits (B3)				res on Livi	-		
_	at or Crust (B4)				ed Iron (C4	,		ow Aquitard (D3)
	posits (B5)				ons in Tille	•	,	Neutral Test (D5)
Surface	Soil Cracks (B6)				Plants (D	1) ( <b>LRR A</b> )		ed Ant Mounds (D6) (LRR A)
Inundat	ion Visible on Aerial	Imagery (B	7) Other (Ex	plain in Re	emarks)		Frost	-Heave Hummocks (D7) ( <b>LRR F</b> )
	y Vegetated Concav	ve Surface (	B8)					
ield Obse		~	-					
		_	No  Depth (ir	·	-			
Water Table		-	No  Depth (ir		-	Wetla	and Hydrology F	resent? Yes 💿 No 🔿
	pillary fringe)		No O Depth (ir		0			
Describe Re Aerial pho		n gauge, m	onitoring well, aerial	photos, pr	evious ins	pections),	if available:	
Remarks: S	ource of hydrolog	y is Eagle	Rock Lake and so	ome grou	ndwater f	from the o	diversion chann	el (OW-ERL3).

	Section, To		State:NM		npling Point	ERL-PF	0
	Section, To						0
		ownsnip, Ra	ange: T29N R13W S3	2			
	Local relie	ef (concave,	convex, none): Conca	ve	S	ope (%): 1	l
Ats. Lat: 36	5.703471		Long: -105.572715		Dat	tum: NAD	)83
v level			NWI class	fication	: None		
or this time of y	ear? Yes (	No	) (If no, explain in	Remai	·ks.)		
significantl	y disturbed?	Are	"Normal Circumstances	" prese	nt? Yes (	No	$\bigcirc$
-			eeded, explain any ans	vers in	Remarks.)		
						eatures	etc
				<b>0</b> ,		butul 00,	
		-					
	with	hin a Wetla	nd? Yes (		No ()		
$\sim$	aka diyar	ion chanr	al (saa surfaca watar	footur	a data sha	at for OW	17
	1	indway be	tween the take and th			inci neau	gate.
-	innent.						
	Dominant	Indicator					
			Dominance Test wo	rkshee	et:		
25	Yes	FACW					
10	Yes	FACW		l, or FA	C	5	(A)
			, ,			5	(A)
						5	(B)
35	= Total Cov	er	Percent of Dominant	Specie	s		. ,
						0.0%	(A/B)
			Prevalence Index w	orkshe	et.		
						olv bv <sup>.</sup>	
							-
			FACW species	78	x 2 =	156	
			FAC species	2	x 3 =	6	
07		er	FACU species	2	x 4 =		
2	No	FACW	UPL species	1	x 5 =	5	
1	No	FAC	Column Totals:	83	(A)	175	(B)
1	No	UPL					
1	No	FACW				2.11	
1	No	FAC				otation	
				-		etation	
							orting
						te sheet)	
						<sup>1</sup> (Explain	))
6	= Total Cov	er	<sup>1</sup> Indicators of hydric	soil and	d wetland h	ydrology i	
			• •	SUDE		nauc.	
					No	$\bigcirc$	
	= Total Cov	er	Present?			$\sim$	
			I				
n, Equisetem	arvense, Ca	ardamine o	cordifolia, Cirsium ar	vense,	Leucanth	emum vu	lgare
	significantly naturally provide the second structure of the second structure o	for this time of year? Yes ( significantly disturbed? naturally problematic? nap showing samplin No C Is the No C Is the No C Is the No C Is the with So C Is the with So C Is the with So C Is the With So C Is the No C Is the With So C Is the No C Is the With So C Is the So C Is the	for this time of year? Yes  No ( significantly disturbed? Are naturally problematic? (If n  nap showing sampling point I  No  No  Is the Sample within a Wetla No  Eagle Rock Lake diversion chann characteristics drop out midway be urs to drop sediment. Dlants.  Absolute Dominant Indicator <u>% Cover Species? Status</u> 25 Yes FACW 10 Yes FACW 10 Yes FACW 10 Yes FACW 15 No FACU 2 No FACU 67 = Total Cover 2 No FACU 67 = Total Cover  2 No FACW 1 No FAC 1 No	for this time of year? Yes       No       (If no, explain in significantly disturbed?         Are "Normal Circumstances naturally problematic?       (If needed, explain any answith and statematics)         nap showing sampling point locations, transect         No       Is the Sampled Area within a Wetland?         Yes       Image: Status of the state of the s	for this time of year? Yes        No (If no, explain in Remain significantly disturbed?       Are "Normal Circumstances" present naturally problematic?         nap showing sampling point locations, transects, impoint locations, transects, iso, transects, iso, transects, iso, transect, transect, transect, transect, transect, transect, transect, trans	for this time of year? Yes No (If no, explain in Remarks.)   significantly disturbed? Are "Normal Circumstances" present? Yes (   naturally problematic? (If needed, explain any answers in Remarks.)   hap showing sampling point locations, transects, important for   No Is the Sampled Area   No within a Wetland?   Yes No   Page Rock Lake diversion channel (see surface water feature data shee characteristics drop out midway between the lake and the diversion char rasts ot drop sediment.   Jants.   Absolute Dominant Indicator   % Cover Species?   25 Yes   Yes FACW   Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC It Are O	for this time of year? Yes ●       No       (If no, explain in Remarks.)         significantly disturbed?       Are "Normal Circumstances" present? Yes ●       No         naturally problematic?       (If needed, explain any answers in Remarks.)         nap showing sampling point locations, transects, important features,         No       Is the Sampled Area         No       Is the Sampled Area         within a Wettand?       Yes ●         No       Is the Sampled Area         No       Is the Sampled Area         No       Is the Sampled Area         within a Wettand?       Yes ●         No       Is the Sampled Area         No       Is the Sampled Area         within a Wettand?       Yes ●         No       Is the Sampled Area         within a Wettand?       Yes ●         No       Is the Sampled Area         No       Is the Sampled Area         No       No         Pacelate       No         Absolute       Dominant Secies         Total Number of Dominant Species       Total % Cover of:         Total Number of Dominant Species       X1 = 0         FACW       FACW         15       Yes FACW         2       No

SUIL
------

(in a la a - )	<u>Matrix</u>	0/			K Features 0/		1.0.52	Taudana	D
(inches)	Color (moist)	<u>%</u>		(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 2	10YR 3/2	100		-	-			SaLo	Roots
2 - 7	10YR 4/4	100		-	-			LoSa	Coarse sand - alluvium
7 - 15	10YR 6/4	30	7.5	YR 5/8	40	C	<u>M</u>	ClSi	
	10YR 4/3	30		-					
_									
<sup>1</sup> Type: C=Conc	centration, D=Depletion	n, RM=Red	duced Matrix	, CS=Covere	d or Coate	d Sand Gra	ins		<sup>2</sup> Location: PL=Pore Lining, M=Matrix
Hydric Soil In	dicators: (Applicat	ole to all L	.RRs, unles	ss otherwise	e noted.)			Indicators f	or Problematic Hydric Soils <sup>3</sup> :
Histosol (	· · ·			andy Redox	• •				/luck (A10)
Black His	ipedon (A2)			Stripped Ma .oamy Muck	• •	(E1) <b>(</b> ava			arent Material (TF2)
	n Sulfide (A4)			oamy Gley				, .	Shallow Dark Surface (TF12) Explain in Remarks)
	Below Dark Surfac	e (A11)		Depleted Ma		(12)			
<u> </u>	rk Surface (A12)	( )		Redox Dark		F6)		<b>.</b>	
Sandy M	ucky Mineral (S1)			Depleted Da	rk Surfac	e (F7)			tors of hydrophytic vegetation and nd hydrology must be present,
Sandy Gl	eyed Matrix (S4)		F	Redox Depr	essions (F	-8)			s disturbed or problematic.
Restrictive La	ayer (if present):								
Туре:								Hydric Soil	Present? Yes 💿 No 🔿
Depth (inch	nes):								
Remarks: Alt	ernating layers o	f coarse	gravel an	d clay.					
	getation at pit: A			-					
Dre	blematic hydric	•1							
110	biematic nyane	soil - veg	getated sa	and and gra	avel bar.				
110		soil - ve	getated sa	and and gra	avel bar.				
		so11 - ve	getated sa	and and gra	avel bar.				
IYDROLOO Wetland Hyd	SY rology Indicators:				avel bar.				
IYDROLOG Wetland Hyd Primary Indicato	SY rology Indicators: prs (minimum of one re		eck all that a	apply)					ary Indicators (minimum of two required)
HYDROLOG Wetland Hyd Primary Indicato	GY rology Indicators: prs (minimum of one re Vater (A1)		eck all that a	apply) Water-Stair	ned Leave	es (B9) ( <b>e</b> x	cept	Wa	ter-Stained Leaves (B9) (except
IYDROLOG         Wetland Hyd         Primary Indicato	<b>SY</b> rology Indicators: ors (minimum of one re Vater (A1) er Table (A2)		eck all that a	apply) Water-Stair MLRA 1, 2	ned Leave 2, 4a, and	es (B9) ( <b>e</b> x	cept	Wa MI	ter-Stained Leaves (B9) (except .RA 1, 2, 4a, and 4b)
IYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation	<b>SY</b> rology Indicators: ors (minimum of one re Vater (A1) er Table (A2) n (A3)		eck all that a	apply) Water-Stair MLRA 1, 2 Salt Crust	ned Leave 2, 4a, and (B11)	es (B9) ( <b>ex</b> <b>4b</b> )	cept	Wa ML X Dra	ter-Stained Leaves (B9) (except .RA 1, 2, 4a, and 4b) ainage Patterns (B10)
IYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma	<b>Fology Indicators:</b> pros (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1)		eck all that a	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic In	ned Leave 2, <b>4a, and</b> (B11) vertebrate	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13)	ccept	Wa ML X Dra	ter-Stained Leaves (B9) (except <b>.RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) <i>r</i> -Season Water Table (C2)
IYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment	<b>GY</b> rology Indicators: ors (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2)		eck all that a	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic In Hydrogen	ned Leave 2, <b>4a, and</b> (B11) vertebrate Sulfide O	es (B9) ( <b>ex</b> <b>4b</b> ) es (B13) dor (C1)	-	Wa ML ML Dra Dry Sat	ter-Stained Leaves (B9) (except .RA 1, 2, 4a, and 4b) ainage Patterns (B10) A-Season Water Table (C2) curation Visible on Aerial Imagery (C9)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo	Fology Indicators: ors (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) posits (B3)		eck all that a	apply) Water-Stair MLRA 1, 2 Salt Crust Aquatic In Hydrogen Oxidized F	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe	es (B9) ( <b>e)</b> <b>4b</b> ) es (B13) dor (C1) eres on Liv	ing Roots (		ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) anage Patterns (B10) 2-Season Water Table (C2) curation Visible on Aerial Imagery (C9) comorphic Position (D2)
IYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mate	The second state of the se		eck all that a	apply) Water-Stair MLRA 1, 2 Salt Crust Aquatic In Hydrogen Oxidized F Presence	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4	ing Roots ((		ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) P-Season Water Table (C2) curation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo	The second state of the se		eck all that a	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille	ing Roots (	Wa     ML     Wa     ML     C3)     C3)     C3     C5     C5	ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) anage Patterns (B10) 2-Season Water Table (C2) curation Visible on Aerial Imagery (C9) comorphic Position (D2)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S	Trology Indicators: prs (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) posits (B3) or Crust (B4) posits (B5)	equired; ch		apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D	ing Roots ( ) ed Soils (C6	→ Wa ML → Dra → Dry → Sat C3) Ge → Sha → FA → Ra	ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) <i>r</i> -Season Water Table (C2) curation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) <i>r</i> -Neutral Test (D5)
IYDROLOC         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S	FY rology Indicators: ors (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) osits (B3) or Crust (B4) osits (B5) Soil Cracks (B6)	equired; ch	eck all that a	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D	ing Roots ( ) ed Soils (C6	→ Wa ML → Dra → Dry → Sat C3) Ge → Sha → FA → Ra	ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) AC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation	<b>BY</b> <b>rology Indicators:</b> ors (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) osits (B3) or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave	equired; ch	eck all that a	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D	ing Roots ( ) ed Soils (C6	→ Wa ML → Dra → Dry → Sat C3) Ge → Sha → FA → Ra	ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) AC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation         Sparsely	Contemporation of the second s	equired; ch	eck all that a	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ned Leave 2, <b>4a, and</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed olain in Re	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D	ing Roots ( ) ed Soils (C6	→ Wa ML → Dra → Dry → Sat C3) Ge → Sha → FA → Ra	ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) AC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation         Sparsely	Context of the second s	equired; ch magery ( e Surface	B7) (B8)	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed blain in Re	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D	ing Roots (i l) ed Soils (C6 1) ( <b>LRR A</b> )	Wa     ML     Wa     ML     C3)     Ge     Ge     Sha     FA     Ge     FA     Ge     Frc	ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) AC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation         Sparsely         Field Observ         Surface Wate         Water Table F         Saturation Pre-	<b>GY</b> <b>rology Indicators:</b> ors (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) osits (B3) or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave <b>ations:</b> r Present? Y esent? Y	equired; ch magery (l e Surface íes ()	B7) (B8)	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (in	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed olain in Re ches): ches):	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D	ing Roots (i l) ed Soils (C6 1) ( <b>LRR A</b> )	Wa     ML     Wa     ML     C3)     Ge     Ge     Sha     FA     Ge     FA     Ge     Frc	ter-Stained Leaves (B9) (except <b>IRA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) IC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7) (LRR F)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation         Sparsely         Field Observ         Surface Wate         Water Table F         Saturation Predincudes capi	Content of the second state of the second stat	magery (l e Surface es () es () es ()	B7) (B8) No (•) No (•)	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (in Depth (in Depth (in	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed olain in Re ches): ches):	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D emarks)	ing Roots (i b) bd Soils (C6 1) (LRR A) Wetla	Wa     ML     Wa     ML     C3)    Ge     Sat     Ge     Sha     FA     FA     Frc	ter-Stained Leaves (B9) (except <b>IRA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) IC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7) (LRR F)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation         Sparsely         Field Observ         Surface Wate         Water Table F         Saturation Pre- (includes capi         Describe Record	<b>GY</b> <b>rology Indicators:</b> ors (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) osits (B3) or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave <b>ations:</b> r Present? Y esent? Y	magery (l e Surface ées () ées () ées () res ()	B7) (B8) No (•) No (•)	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (in Depth (in Depth (in	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed olain in Re ches): ches):	es (B9) ( <b>e</b> x <b>4b</b> ) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D emarks)	ing Roots (i b) bd Soils (C6 1) (LRR A) Wetla	Wa     ML     Wa     ML     C3)    Ge     Sat     Ge     Sha     FA     FA     Frc	ter-Stained Leaves (B9) (except <b>IRA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) IC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7) (LRR F)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation         Sparsely         Field Observ         Surface Wate         Water Table F         Saturation Predinted in Construction         Describe Reconstruction	Content of the second stream o	magery ( e Surface res () res () res () gauge, n	B7) (B8) No (•) No (•) No (•) No (•)	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (in Depth (in Depth (in well, aerial )	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed olain in Re ches): ches): ches): ches):	es (B9) (e) 4b) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D emarks) emarks)	ing Roots (i ed Soils (C6 1) (LRR A) Wetla pections), i	Wa     ML     Wa     ML     C3)    Ge     Sat     Ge     Sha     FA     FA     Frc	ter-Stained Leaves (B9) (except <b>IRA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) IC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7) (LRR F)
HYDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation         Sparsely         Field Observ         Surface Wate         Water Table F         Saturation Predincludes capi         Describe Reco         NHD shows         Remarks: Dry	<b>SY</b> <b>rology Indicators:</b> prs (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) c Deposits (B2) osits (B3) c or Crust (B4) osits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave <b>ations:</b> r Present? Present? Y esent? Y esent? Y esent? Y orded Data (stream diversion channel	magery ( e Surface es O es O gauge, r el.	B7) (B8) No (•) No (•) No (•) No (•)	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (in Depth (in Depth (in well, aerial )	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed olain in Re ches): ches): ches): ches):	es (B9) (e) 4b) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D emarks) emarks)	ing Roots (i ed Soils (C6 1) (LRR A) Wetla pections), i	Wa     ML     Wa     ML     C3)    Ge     Sat     Ge     Sha     FA     FA     Frc	ter-Stained Leaves (B9) (except <b>RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) 7-Season Water Table (C2) turation Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) IC-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7) (LRR F)
WDROLOG         Wetland Hyd         Primary Indicato         Surface V         High Wat         Saturation         Water Ma         Sediment         Drift Depo         Algai Mat         Iron Depo         Surface S         Inundation         Sparsely         Field Observ         Surface Wate         Water Table F         Saturation Predincudes capi         Describe Reco         NHD shows         Remarks: Dry	<b>SY</b> <b>rology Indicators:</b> prs (minimum of one re Vater (A1) er Table (A2) n (A3) arks (B1) : Deposits (B2) posits (B3) : or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave <b>ations:</b> r Present? Y Present? Y esent? Y esent? Y llary fringe) orded Data (stream diversion channel y season delineati	magery ( e Surface es O es O gauge, r el.	B7) (B8) No (•) No (•) No (•) No (•)	apply) Water-Stain MLRA 1, 2 Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp Depth (in Depth (in Depth (in well, aerial )	ned Leave 2, 4a, and (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reducti Stressed olain in Re ches): ches): ches): ches):	es (B9) (e) 4b) es (B13) dor (C1) eres on Liv ed Iron (C4 ons in Tille Plants (D emarks) emarks)	ing Roots (i ed Soils (C6 1) (LRR A) Wetla pections), i	Wa     ML     Wa     ML     C3)    Ge     Sat     Ge     Sha     FA     FA     Frc	ter-Stained Leaves (B9) (except <b>.RA 1, 2, 4a, and 4b</b> ) ainage Patterns (B10) A-Season Water Table (C2) auration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) AC-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> ) ost-Heave Hummocks (D7) ( <b>LRR F</b> )

Project/Site: Questa Mine Remediation Remo	val Action	City/Cou	unty: Questa/T	laos	Sa	mpling Date	e: 10-16-12	2
Applicant/Owner: Chevron Mining, Inc.				State:NM	Sa	mpling Poin	t: ERL-UF	2
nvestigator(s): J. Dawson/S. Hall		Section,	Township, Ra	nge: T29N R13W	S32			
andform (hillslope, terrace, etc.): Hillslope		Local re	elief (concave,	convex, none): Hill	lslope	5	Slope (%): 4	45
Subregion (LRR): MLRA 39 - Arizona and New Mex	ico Mts. Lat: 36	.703167		Long: -105.5726	1		atum: NAD	
Soil Map Unit Name: Cumulic Haplaquolls, ne					assificatio			
Are climatic / hydrologic conditions on the site typ	•	oar? Vos	No (					
				· · ·		,		$\sim$
Are Vegetation Soil or Hydrology	significantly			'Normal Circumstan	-			O
Are Vegetation Soil or Hydrology	naturally pr	oblematio	c? (If ne	eded, explain any a	answers in	Remarks.)		
SUMMARY OF FINDINGS - Attach sit	e map showing	ı sampl	ling point lo	ocations, trans	ects, im	portant	features,	, etc.
Hydrophytic Vegetation Present? Yes	No 💿	1	s the Sampled	Area				
Hydric Soil Present? Yes			vithin a Wetlar		$\bigcirc$	No 🖲		
	No (				C			
Remarks: Upland soil pit for ERL-PEM a	nd ERL-PFO. Po	int taken	on side slop	e south of wetland	d and div	ersion cha	annel.	
			-					
/EGETATION - Use scientific names	of plants.							
Tree Stratum Distaize:	Absolute		Indicator					
Tree Stratum Plot size:	<u>% Cover</u>		<u>s?</u> <u>Status</u>	Dominance Test				
1. Pinus ponderosa	$\frac{10}{1}$	Yes	FACU	Number of Domin That Are OBL, FA				
2. Populus angustifolia	$\frac{1}{2}$	No	FACW	(excluding FAC-):			0	(A)
3. Juniperus scopularum	2	No	Not Listed	Total Number of [				
4				Species Across A	II Strata:		3	(B)
Sapling/Shrub Stratum Plot size:	13	= Total C	over	Percent of Domin That Are OBL, FA			0.0	
1. Fallugia paradoxa	35	Yes	Not Listed			40.	0.0 %	(A/B)
2. Rhus aromatica	1	No	UPL	Prevalence Inde	x worksh	eet:		
3. Quercus gambellii	1	No	Not Listed	Total % Cove	er of:	Mult	iply by:	-
4. Pinus edulis	1	No	Not Listed	OBL species		x 1 =	0	
5. Rosa woodsii	2	No	FACU	FACW species	1	x 2 =	2	
	40	= Total C	over	FAC species		x 3 =	0	
Herb Stratum Plot size				FACU species	18	x 4 =	72	
1. Bromus inermis	15	Yes		UPL species	9	x 5 =	45	
2. Chrysopsis villosa	1	No	Not Listed	Column Totals:	28	(A)	119	(B)
3 Thinopyrum intermedium	1	No	Not Listed	Prevalence	Index = E	3/A =	4.25	
4. Lupinus argenteus	5	No	Not Listed	Hydrophytic Veg				
5. Carex sp.	1	No		1 - Rapid Tes			getation	
6. <i>Cirsium sp.</i> 7.	1	No		2 - Dominan	ce Test is	>50%		
				3 - Prevalenc				
8				4 - Morpholog		tations <sup>1</sup> (Pro		orting
9				5 - Wetland N				
10	24	= Total C		Problematic I			on <sup>1</sup> (Explain	ı)
Woody Vine Stratum Plot size	24			<sup>1</sup> Indicators of hyd	fric soil ar	nd wetland	hydrology r	
1				be present, unles	ss disturbe	ed or proble	matic.	
2				Hydrophytic Vegetation	Vac C	No		
		= Total C		•	Yes (	) NO	J	
		- 101010	over	Present?				
% Bare Ground in Herb Stratum $76$ %			over	Present?				

Depth	N A - 4 '		-				the absence of i	
(inches)	<u>Matrix</u> Color (moist)	<u>«</u> %	Color (moist)	dox Feature %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 12	10YR 5/4	100					Sa	
0-12	101K J/4						Sa	
			·					
<sup>1</sup> Type: C=Co	ncentration, D=Deple	tion, RM=Red	duced Matrix, CS=Cov	vered or Coate	ed Sand Gra	ins		<sup>2</sup> Location: PL=Pore Lining, M=Matrix
Hydric Soil	Indicators: (Applic	able to all L	RRs, unless otherv	vise noted.)			Indicators for F	Problematic Hydric Soils <sup>3</sup> :
Histoso	ol (A1)		Sandy Re	dox (S5)			2 cm Muc	k (A10)
	Epipedon (A2)		Stripped	Matrix (S6)			Red Pare	nt Material (TF2)
	listic (A3)			ucky Minera		ept MLRA		low Dark Surface (TF12)
	en Sulfide (A4)			leyed Matrix	(F2)		Other (Exp	olain in Remarks)
·	ed Below Dark Surf	· · ·		Matrix (F3)				
	Oark Surface (A12) Mucky Mineral (S1			ark Surface (	. ,		<sup>3</sup> Indicators	of hydrophytic vegetation and
<i>'</i>	Gleyed Matrix (S4)	,		Dark Surfac epressions (I	• •			ydrology must be present,
					10)		unless di	sturbed or problematic.
	Layer (if present):	:						
Туре:							Hydric Soil Pre	sent? Yes 🔿 No 🖲
Depth (in	arren at pit.							
HYDROLC	OGY							
	OGY /drology Indicator	rs:						
Wetland Hy			eck all that apply)				Secondary	ndicators (minimum of two required)
Wetland Hy Primary Indica	drology Indicator		Water-S	tained Leav		cept	Water-	Stained Leaves (B9) (except
Wetland Hy Primary Indica	vdrology Indicator ators (minimum of one		Water-S	tained Leav		cept	Water-	Stained Leaves (B9) (except 1, 2, 4a, and 4b)
Wetland Hy Primary Indica Surface High W	Adrology Indicator ators (minimum of one Water (A1)		Water-S MLRA			cept	Water-	Stained Leaves (B9) (except
Wetland Hy       Primary Indica       Surface       High W       Saturati       Water N	vdrology Indicator ators (minimum of one water (A1) fater Table (A2) ion (A3) Marks (B1)		Water-S MLRA	1, 2, 4a, and	l 4b)	cept	Water- MLRA	Stained Leaves (B9) (except <b>1, 2, 4a, and 4b</b> ) ge Patterns (B10) eason Water Table (C2)
Wetland Hy       Primary Indica       Surface       High W       Saturati       Water N       Sedime	vdrology Indicator ators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		Water-S MLRA	<b>1, 2, 4a, and</b> ust (B11)	<b>I 4b</b> ) es (B13)	cept	Water- MLRA	Stained Leaves (B9) (except <b>1, 2, 4a, and 4b</b> ) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9)
Wetland Hy       Primary Indication       Surface       High W       Saturati       Water M       Sedime       Drift De	vdrology Indicator ators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		Water-S MLRA Salt Cri Aquatio	<b>1, 2, 4a, and</b> ust (B11) : Invertebrate	<b>i 4b</b> ) es (B13) edor (C1)	·	C3)	Stained Leaves (B9) (except <b>1, 2, 4a, and 4b</b> ) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2)
Wetland Hy       Primary Indication       Surface       High W       Saturati       Water M       Sedime       Drift De	vdrology Indicator ators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		Water-S MLRA Salt Cru Aquatic Hydrog	<b>1, 2, 4a, and</b> ust (B11) Invertebrate en Sulfide O	l 4b) es (B13) idor (C1) eres on Liv	ng Roots (	C3) C3 Shallo	Stained Leaves (B9) (except 1, 2, 4a, and 4b) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3)
Wetland Hy         Primary Indica         Surface         High W         Saturati         Water N         Sedime         Drift De         Algai M         Iron De	vdrology Indicator ators (minimum of one e Water (A1) fater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5)		Water-S MLRA Salt Cru Aquatic Hydrog Oxidize Presen Recent	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti	<b>I 4b</b> ) es (B13) idor (C1) eres on Liv ed Iron (C4 ions in Tille	ng Roots ( ) d Soils (Cl	C3) C3) FAC-1	Stained Leaves (B9) (except 1, 2, 4a, and 4b) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5)
Wetland Hy Primary Indica Surface High W Saturati Water N Sedime Drift De Algai M Iron De Surface	Adrology Indicator ators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6)	e required; ch	Water-S MLRA Salt Cri Aquatio Hydrog Oxidize Presen Recent Stunted	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti or Stressec	I 4b) es (B13) edor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D	ng Roots ( ) d Soils (Cl	C3) Geome 6) FAC-I C3 Raised	Stained Leaves (B9) (except 1, 2, 4a, and 4b) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A)
Wetland Hy         Primary Indication         Surface         High W         Saturati         Water M         Sedime         Drift De         Algai M         Iron De         Surface         Inundat	vdrology Indicator ators (minimum of one water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aeria	e required; che al Imagery (E	Water-S MLRA Salt Cri Aquatic Hydrog Oxidize Presen Recent Stunted B7) Other (	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti	I 4b) es (B13) edor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D	ng Roots ( ) d Soils (Cl	C3) Geome 6) FAC-I C3 Raised	Stained Leaves (B9) (except 1, 2, 4a, and 4b) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5)
Primary Indica Surface High W Saturati Water M Sedime Drift De Algai M Iron De Surface Inundat Sparsel	vdrology Indicator ators (minimum of one a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aeria by Vegetated Conca	e required; che al Imagery (E	Water-S MLRA Salt Cri Aquatic Hydrog Oxidize Presen Recent Stunted B7) Other (	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti or Stressec	I 4b) es (B13) edor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D	ng Roots ( ) d Soils (Cl	C3) Geome 6) FAC-I C3 Raised	Stained Leaves (B9) (except 1, 2, 4a, and 4b) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A)
Wetland Hy         Primary Indication         Surface         High W         Saturati         Water N         Sedime         Drift De         Algai M         Iron De         Surface         Inundat         Sparsel	Adrology Indicator ators (minimum of one Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Conca rvations:	e required; che al Imagery (E ave Surface	Water-S MLRA Salt Cru Aquatic Hydrog Oxidize Presen Recent Stunted B7) Other ( (B8)	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti I or Stressec Explain in Re	I 4b) es (B13) edor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D	ng Roots ( ) d Soils (Cl	C3) Geome 6) FAC-I C3 Raised	Stained Leaves (B9) (except 1, 2, 4a, and 4b) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A)
Wetland Hy         Primary Indication         Surface         High W         Saturation         Water N         Sedime         Drift De         Algai M         Iron De         Surface         Inundat         Sparsel         Field Obset         Surface Water	Adrology Indicator ators (minimum of one ators (minimum of one ators (minimum of one ators (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aeria by Vegetated Conca rvations: ter Present?	e required; che al Imagery (E ave Surface Yes 〇	Water-S MLRA Salt Cru Aquatic Hydrog Oxidize Presen Recent Stunted B7) Other ( (B8) No  Depth	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti I or Stressec Explain in Re (inches):	I 4b) es (B13) edor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D	ng Roots ( .) d Soils (Cl 1) ( <b>LRR A</b> )	C3) C3 C3) C3 C3) C3 C3) C3 C3) C4 C4 C4 C4 C4 C4 C4 C4 C4 C4	Stained Leaves (B9) (except <b>1</b> , <b>2</b> , <b>4a</b> , and <b>4b</b> ) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7) (LRR F)
Wetland Hy Primary Indica Surface High W Saturati Water M Sedime Drift De Algai M Iron De Surface Inundat Sparsel Field Obset Surface Wa Water Table	vdrology Indicator ators (minimum of one a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aeria ly Vegetated Conca rvations: ter Present? a Present?	e required; che al Imagery (E ave Surface Yes () Yes ()	Water-S MLRA Water-S MLRA Salt Cri Aquatic Hydrog Oxidize Presen Recent Stuntec B7) Other ( (B8) No  Depth No  Depth	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduct Iron Reducti I or Stressec Explain in Re (inches):	I 4b) es (B13) dor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D emarks) - -	ng Roots ( .) d Soils (Cl 1) ( <b>LRR A</b> )	C3) Geome 6) FAC-I C3 Raised	Stained Leaves (B9) (except <b>1</b> , <b>2</b> , <b>4a</b> , and <b>4b</b> ) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7) (LRR F)
Wetland Hy Primary Indica Surface High W Saturati Water N Sedime Drift De Algai M Iron De Surface Inundat Sparsel Field Obset Surface Wa Water Table Saturation F	vdrology Indicator ators (minimum of one e Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aeria ly Vegetated Conca rvations: ter Present? e Present?	e required; che al Imagery (E ave Surface Yes 〇	Water-S MLRA Water-S MLRA Salt Cri Aquatic Hydrog Oxidize Presen Recent Stunted B7) Other ( (B8) No  Depth No  Depth	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti I or Stressec Explain in Re (inches):	I 4b) es (B13) edor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D	ng Roots ( .) d Soils (Cl 1) ( <b>LRR A</b> )	C3) C3 C3) C3 C3) C3 C3) C3 C3) C3 C3) C4 C3) C4 C4 C4 C4 C4 C4 C4 C4 C4 C4	Stained Leaves (B9) (except <b>1</b> , <b>2</b> , <b>4a</b> , and <b>4b</b> ) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7) (LRR F)
Wetland Hy         Primary Indication         Surface         High W         Saturation         Water M         Sedime         Drift De         Algai M         Iron De         Surface         Inundat         Sparsel         Field Obset         Surface Wa         Water Table         Saturation F         (includes cate)	vdrology Indicator ators (minimum of one a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aeria ly Vegetated Conca rvations: ter Present? a Present?	e required; che al Imagery (E ave Surface Yes () Yes () Yes ()	Water-S MLRA Salt Cru Aquatic Hydrog Oxidize Presen Recent Stunted B7) Other ( (B8) No  Depth No  Depth No  Depth	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti d or Stressec Explain in Re (inches): (inches): (inches):	I 4b) es (B13) edor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D emarks) - -	ng Roots ( -) d Soils (Cl 1) (LRR A)	Water- MLRA     Draina     Dry-Se     Satura     Satura     Shallo     FAC-1     Raisea     Frost-	Stained Leaves (B9) (except <b>1</b> , <b>2</b> , <b>4a</b> , and <b>4b</b> ) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7) (LRR F)
Wetland Hy         Primary Indication         Surface         High W         Saturation         Water M         Sedime         Drift De         Algai M         Iron De         Surface         Inundat         Sparsel         Field Obset         Surface Wa         Water Table         Saturation F         (includes cate)	Adrology Indicator ators (minimum of one ators (minimum of one ators (minimum of one ators (Manimum of one ators (Manimum of one ators (Manimum of One ator (A3) Marks (B1) ator (A3) Marks (B1) ator Crust (B2) aposits (B3) ator Crust (B4) posits (B5) a Soil Cracks (B6) ator Crust (B4) posits (B5) a Soil Cracks (B6) ator Crust (B4) posits (B5) a Soil Cracks (B6) ator (Crust (B4) posits (B5) ator (Crust (B4) posits (B5) a Soil Cracks (B6) ator (Crust (B4) posits (B5) a Soil Cracks (B6) ator (Crust (B4) posits (B5) a Soil Cracks (B6) ator (Crust (B4) posits (B5) ator (Crust (B5) ator (Crust (B4) posits (B5) ator (Crust (B5) ator (Cru	e required; che al Imagery (E ave Surface Yes () Yes () Yes ()	Water-S MLRA Salt Cru Aquatic Hydrog Oxidize Presen Recent Stunted B7) Other ( (B8) No  Depth No  Depth No  Depth	1, 2, 4a, and ust (B11) Invertebrate en Sulfide O d Rhizosphe ce of Reduce Iron Reducti d or Stressec Explain in Re (inches): (inches): (inches):	I 4b) es (B13) edor (C1) eres on Liv ed Iron (C4 ions in Tille I Plants (D emarks) - -	ng Roots ( -) d Soils (Cl 1) (LRR A)	Water- MLRA     Draina     Dry-Se     Satura     Satura     Shallo     FAC-1     Raisea     Frost-	Stained Leaves (B9) (except <b>1</b> , <b>2</b> , <b>4a</b> , and <b>4b</b> ) ge Patterns (B10) eason Water Table (C2) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7) (LRR F)
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Irface Waters Features Data Sheet	-
Project -	Questa Mine Remediation Removal Action
Date -	Tuesday, October 16, 2012
Investigators -	J. Dawson/ S. Hall
Area ID -	OW-ERL1 (Eagle Rock Lake)
Centerpoint coordinates -	36.7034/-105.5742
HUC -	13020101
Land Use -	Recreation
Physical	Dead
Type of feature (pond or stream)-	Pond
Source-	Red River
Connectivity -	Red River
Water Clarity (clear, murky, turbid)-	Cloudy
Water Color (if obvious)-	Turquoise
or Streams Only	
Average Width of OHWM (bankfull)-	N/A
Average observed width-	N/A
Bankfull depth-	N/A
Observed Depth-	N/A
Bank Slope (X:X) (on each side if different - use N/S or E/W)-	N/A
Evidence of undercutting or excessive erosion-	N/A
Occurrance of riffle-pool-run complexes (Natural hydro only)-	N/A
Channelized or meandering (Natural hydro only)-	
Bed substrate composition-	N/A
Velocity (slow, moderate, fast)-	N/A
Flow Direction (to)-	N/A
or Ponds Only	
Inlet/Outlet present?	Yes, inlet is diversion channel from Red River
Restricted outlet?	Yes, outlets to Red River through culvert.
Biological	
Percent estimated bank cover-	80, discontinuous fringe around feature
Bank vegetation (dominant species/if associated with wetland refer to data sheet)-	See wetland data sheet WL-ERL-PEM
Aquatic vegetation present (Y/N, list species if known)-	No
Percent overstory (amount hanging over the channel, streams only)-	0
Evidence of rafted/submerged large woody debris-	No
Evidence of other rafting (smaller debris, etc.)-	No

Surface Waters Features Data Sheet	
Project -	Questa Mine Remediation Removal Action
Date -	Tuesday, October 16, 2012
Investigators -	J. Dawson/ S. Hall
Area ID -	OW-ERL2 (Red River)
Centerpoint coordinates -	36.7030/-105.5751
HUC -	13020101
Land Use -	Recreation
Physical	
Type of feature (pond or stream)-	Stream
Source-	Confluence of several high altitude Sangre de Christo streams
Connectivity -	Rio Grande
Water Clarity (clear, murky, turbid)-	Slightly cloudy
Water Color (if obvious)-	N/A
For Streams Only	
Average Width of OHWM (bankfull)-	18', widens to 20' at southern end of Study Area
Average observed width-	15'
Bankfull depth-	18 to 24"
Observed Depth-	6-18"
Bank Slope (X:X) (on each side if different - use N/S or E/W)-	1:8
Evidence of undercutting or excessive erosion-	In places. More evident upstream near diversion.
Occurrance of riffle-pool-run complexes (Natural	some human made obstructions, and a beaver dam. More
hydro only)-	pronounced downstream of Study Area.
Channelized or meandering (Natural hydro only)-	Slight meandering.
Bed substrate composition-	Cobble
Velocity (slow, moderate, fast)-	Moderate flow adjacent to lake, slows below beaver dam.
Flow Direction (to)-	West
For Ponds Only	
Inlet/Outlet present?	N/A
Restricted outlet?	N/A
Biological	
Percent estimated bank cover-	70
Bank vegetation (dominant species/if associated with wetland refer to data sheet)-	Alnus sp., Bromus inermis, Populus angustifolia
Aquatic vegetation present (Y/N, list species if known)-	No
Percent overstory (amount hanging over the channel, streams only)-	10, predominantly south of beaver dam
Evidence of rafted/submerged large woody debris-	Yes
Evidence of other rafting (smaller debris, etc.)-	Yes
Aquatic or terrestrial wildlife present (list species)-	Kingfisher, beaver dam
Notes: It appears that the channel may have been div	verted when Eagle Rock Lake was constructed. This reach is

Notes: It appears that the channel may have been diverted when Eagle Rock Lake was constructed. This reach is distinctly different from the channel above the lake and again below the bridge. Flows are higher and the channel sides appear to be cut deep into the substrate.

Project -	Questa Mine Remediation Removal Action
Date -	Tuesday, October 16, 2012
Investigators -	J. Dawson/ S. Hall
Area ID -	OW-ERL3 (Eagle Rock Lake Diversion Ditch)
Centerpoint coordinates -	36.7035/-105.5725
HUC -	13020101
Land Use -	Recreation
Physical	
Type of feature (pond or stream)-	Stream
Source-	Red River
Connectivity -	Eagle Rock Lake
Water Clarity (clear, murky, turbid)-	Milky (dissolved aluminum)
Water Color (if obvious)-	None
for Streams Only	None
Average Width of OHWM (bankfull)-	2 feet
Average observed width-	2 feet, widens to 6 feet at inlet to lake
Bankfull depth-	18 inches
Observed Depth-	12 inches
Bank Slope (X:X) (on each side if different - use N/S or E/W)-	1:1 sloping to level at confluence
Evidence of undercutting or excessive erosion-	No
Occurrance of riffle-pool-run complexes (Natural hydro only)-	N/A
Channelized or meandering (Natural hydro only)-	N/A
Bed substrate composition-	Unconsolidated
Velocity (slow, moderate, fast)-	Slow
Flow Direction (to)-	West
or Ponds Only	
Inlet/Outlet present?	
Restricted outlet?	
Biological	
Percent estimated bank cover-	100
Bank vegetation (dominant species/if associated with wetland refer to data sheet)-	Alnus sp., also see wetland data sheet WL-ERL-PFO
Aquatic vegetation present (Y/N, list species if known)-	No
Percent overstory (amount hanging over the channel, streams only)-	100
Evidence of rafted/submerged large woody debris-	No
Evidence of other rafting (smaller debris, etc.)-	No
Aquatic or terrestrial wildlife present (list species)-	None

oject/Site: Questa Mine Remediation Removal	Action	City/Count	ty: Questa/	Taos	Sam	pling Date:	10-17-2	012
oplicant/Owner: Chevron Mining, Inc.	-	State:NM			Sampling Point: EDC-1			
vestigator(s): J. Dawson/S. Hall		Section, T	ownship, Ra	nge: T29N R12W S	525, 36			
indform (hillslope, terrace, etc.): Constructed char	nnel	Local relie	ef (concave,	convex, none): None		Sk	ope (%): <	<1
ubregion (LRR): D - Interior Deserts	Lat: 36	.708668		Long: -105.609575	,	Datı	um: NAD	083
bil Map Unit Name: FfC, SED, SmB				NWI class	sification	: None		
e climatic / hydrologic conditions on the site typical for	or this time of y	ear? Yes (	No (	(If no, explain ii	n Remar	ks.)		
e Vegetation Soil or Hydrology	significantly	y disturbed?	Are	"Normal Circumstance	s" preser	nt?Yes 🖲	No	$\bigcirc$
e Vegetation Soil X or Hydrology	naturally pr	oblematic?	(lf ne	eeded, explain any ans	wers in I	Remarks.)		
UMMARY OF FINDINGS - Attach site m	ap showinç	g samplir	ng point le	ocations, transec	ts, imp	oortant fe	atures,	, etc.
Hydrophytic Vegetation Present? Yes (	No 🔿	ls t	he Sampled	I Area				
Hydric Soil Present? Yes 💿	No 🔿	wit	hin a Wetla	nd? Yes (	Đ	No 🔿		
Vetland Hydrology Present? Yes	No 🔿							
Remarks: PEM wetland within a constructed ch								
Portions of the ditch were inundated a			-	0 0	ng seaso	on through	plant	
remnants, shells, and previous aerial p		c soils not	present wi	thin this feature.				
EGETATION - Use scientific names of p	lants.							
Free Other turner Distriction N/A	Absolute		Indicator	Dominance Test we	orkshee	t:		
<u>Free Stratum</u> Plot size: <u>N/A</u>	<u>% Cover</u>	Species?	Status	Number of Dominan			2	(A)
l 2				That Are OBL, FAC	N, OF FA	U	2	(A)
<u></u>				Total Number of Dor		(	2	(P)
 ŧ.				Species Across All S	silala.	4	2	(B)
r	_	= Total Co	ver	Percent of Dominant That Are OBL, FAC			0.0 %	(A/B)
Sapling/Shrub Stratum Plot size:					V, 011A	0. 10	0.0%	(70)
l				Prevalence Index w		et:		
2				Total % Cover c		Multip		
3				OBL species	32	x 1 =	32	
ł				FACW species	12	x 2 =	24	
				FAC species	35	x 3 =	105	
Herb Stratum Plot size: 100 x 60		= Total Co	over	UPL species		x 4 = x 5 =	0	
. Hordeum jubatum	35	Yes	FAC		70		0 161	(B)
2. Typha angustifolia	25	Yes	OBL	Column Totals:	79	(A)	101	(D)
Rumex salicifolius	12	No	FACW	Prevalence Inc	lex = B/	A =	2.04	
Rorippa curvipes	4	No	OBL	Hydrophytic Veget	ation Inc	licators:		
5. Carex nebrascensis	2	No	OBL	X Dominance Tes	t is >50%	6		
Eleocharis palustris	1	No	OBL	× Prevalence Inde				
7			_	Morphological A data in Rema	daptatio	ns <sup>1</sup> (Provide	supporti	ng
3.			_	Problematic Hyd		•	,	0
)						, ogetation	(_,,p.c)	.,
0		_		_				
Noody Vine Stratum Plot size: <u>N/A</u>	79	= Total Co	over	<sup>1</sup> Indicators of hydric be present.	soil and	I wetland hy	ydrology r	must
2.				Hydrophytic				
		= Total Co	ver	Vegetation Ye	es 💿	No 🤇	)	
% Bare Ground in Herb Stratum $21~\%$ % (	Cover of Biotic		0/	Present?				
			%	uotland areas Will	011/0 07	and ada-	of above	101
Remarks: Salix exigua and scattered Populus sp are clearly out of the wetland. Willow Minors include Beckmannia syzigach	ws on west sic	le occur aj	pprox. 1 fo	ot into the wetland.	PEM v	egetation i	s dor	nin

Polygonum ramosissimum.

+

SOIL
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Profile Desc	cription: (Describe	to the dept	h needed to docu	ment the	e indicator	or confirm	n the absence of	indicators.)	
Depth (inches)	Matrix Color (moist)	%	Redo Color (moist)	<u>x Featur</u> %	es Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0 - 0.5	10YR 3/2	100	-				Gravels	Organic, fibrous, shells	
0.5 - 3	7.5 YR 5/3	100	_				GrSaCl		
3 - 14	7.5 YR 5/3	96	7.5 YR 4/6	2	- <u>C</u>	M	GrSaCl		
			5YR 4/6	$-\frac{2}{2}$	$\frac{c}{C}$	M			
			511( +/ 0		- <del>C</del>				
						·			
		· –				·			
$\frac{1}{1}$	oncentration, D=Dep	lotion DM-	Poducod Matrix	<sup>2</sup> L opatie		Lining D	C=Root Channel,		
Type. C=C	oncentration, D=Dep	letion, Rivi=	Reduced Matrix.	Localic	DII. PL=POI	e Lining, R	C=Rool Channel,		
Hydric Soil Ir	ndicators: (Applicabl	le to all LRF	s, unless otherwis	e noted.)			Indicators for	Problematic Hydric Soils <sup>3</sup> :	
Histosol			Sandy Redo	ox (S5)			1 cm Mud	ck (A9) ( <b>LRR C</b> )	
	pipedon (A2)		Stripped M					ck (A10) (LRR B)	
	istic (A3) en Sulfide (A4)			•				Vertic (F18) ent Material (TF2)	
	d Layers (A5) ( <b>LRR C</b>	2)	Loamy Gle	-				(plain in Remarks)	
	uck (A9) (LRR D)	•)	Redox Dar						
	d Below Dark Surface	e (A11)	Depleted D		( )				
	ark Surface (A12)	. ,	Redox Dep						
Sandy N	lucky Mineral (S1)		Vernal Poo	ols (F9)			<sup>3</sup> Indicators of hydrophytic vegetation and		
Sandy G	Bleyed Matrix (S4)						wetland hy	drology must be present.	
	Layer (if present):								
Туре:							Hydric Soil Pr	resent? Yes 💿 No 🔿	
Depth (in	,								
	larginal hydric soil	-	*				1		
Pr	oblematic soil - re	cently dev	veloped/seasonal	ly flood	ed (based	on histori	c photos).		
HYDROLO	GY								
	drology Indicators:								
-	cators (any one indicators		cient)				Seconda	ary Indicators (2 or more required)	
X Surface			X Salt Crus	t (B11)				er Marks (B1) ( <b>Riverine</b> )	
	ater Table (A2)		Biotic Cru					iment Deposits (B2) ( <b>Riverine</b> )	
Saturatio	. ,		X Aquatic Ir	. ,	tes (B13)			Deposits (B3) ( <b>Riverine</b> )	
Water M	larks (B1) (Nonriveri	ine)		Sulfide	Odor (C1)			nage Patterns (B10)	
Sedimer	nt Deposits (B2) (Nor	nriverine)	Oxidized	Rhizosph	neres along	Living Roc		Season Water Table (C2)	
Drift Dep	posits (B3) (Nonriver	rine)	Presence	of Redu	ced Iron (C	4)	Cray	/fish Burrows (C8)	
Surface	Soil Cracks (B6)		Recent Ire	on Reduc	ction in Plov	ved Soils (	C6) 🔀 Satu	ration Visible on Aerial Imagery (C9)	
Inundati	on Visible on Aerial I	magery (B7	) 🗌 Thin Muc	k Surface	e (C7)		Sha	llow Aquitard (D3)	
Water-S	tained Leaves (B9)		Other (Ex	plain in F	Remarks)		FAC	C-Neutral Test (D5)	
Field Obser	vations:								
Surface Wat	er Present? Y	es 💿 🛛 N	No 🔿 Depth (ir	nches):	1.5				
Water Table	Present? Y	es 💿 🛛 N	No 🔿 Depth (ir	nches):	11	Wetl	and Hydrology F	Present? Yes 💿 No 🔿	
Saturation P	resent? Y	es 💿 🛛 N	No 🔿 Depth (ir	nches):	0				

Aerial photographs.

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Three species of gastropod present in surface layer.

Flat sided construction channel approx. 60' wide. No evidence of directional flow. West side - 3-4' wide vegetated ditch inundated to 6" with standing water. ditch appears slightly elevated. Approx. 35 percent standing water 1-2" deep near soil pit. More inundation on the eastern side of the channel then on the west. Previous aerial photographs show this feature to be completely inundated in previous years.

(includes capillary fringe)

Project/Site: Questa Mine Remediation Removal Action	City/County:Q	Questa/Taos	Sampling Date: 10-17-2012		
Applicant/Owner: Chevron Mining, INC.		State:NM	Sampling Point: EDC-1-UP		
Investigator(s): J. Dawson/ S. Hall	Section, Towns	ship, Range: T29N R12W S3	6		
Landform (hillslope, terrace, etc.): Terrace	Local relief (co	ncave, convex, none): None	Slope (%):		
Subregion (LRR): <u>D</u> - Interior Deserts Lat: <u>3</u>	36.708926	Long: -105.609871	Datum: NAD83		
Soil Map Unit Name: Ffc, Sep, SmB		NWI classif	ication: None		
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes 🖲	No 🔿 (If no, explain in I	Remarks.)		
Are Vegetation Soil or Hydrology significan	ntly disturbed?	Are "Normal Circumstances"	present? Yes 💿 No 🔿		
Are Vegetation Soil or Hydrology naturally	problematic?	(If needed, explain any answ	ers in Remarks.)		
SUMMARY OF FINDINGS - Attach site map showing	ng sampling p	oint locations, transects	s, important features, etc.		

Hydrophytic Vegetation Present?	Yes	$\bigcirc$	No	$\bullet$	Is the Sampled Area
Hydric Soil Present?	Yes	$\bigcirc$	No	lacksquare	within a Wetland? Yes 🔿 No 🖲
Wetland Hydrology Present?	Yes	$\bigcirc$	No	lacksquare	
Remarks: Upland soil pit for EDC-1	. Ter	race or	n east :	side of tailir	gs facility at about same elevation as the opposite top of bank of

the Eastern Diversion Channel. Greater than 1:1 slope to channel bottom.

## **VEGETATION - Use scientific names of plants.**

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum Plot size:	% Cover	Species?	Status	Number of Dominant Species		
1				That Are OBL, FACW, or FAC	0	(A)
2.				Total Number of Dominant		
3.				Species Across All Strata:	1	(B)
4.						. ,
		= Total Co		<ul> <li>Percent of Dominant Species</li> <li>That Are OBL, FACW, or FAC</li> </ul>	0.0	
Sapling/Shrub Stratum Plot size: 25 x 25				That Are OBL, FACW, of FAC	: 0.0 %	(A/B)
1. Artemisia tridentata	28	Yes	Not Listed	Prevalence Index worksheet	:	
2. Ericameria nauseosus	5	No	Not Listed	Total % Cover of:	Multiply by:	
3.				OBL species	x 1 = (	)
4.				FACW species	x 2 = (	)
5.				FAC species	x 3 = (	)
	33	= Total Co	ver	FACU species	x 4 = (	)
Herb Stratum Plot size:				UPL species	x 5 = (	)
1.				Column Totals:	(A) (	) (B)
2.		-				
3.				Prevalence Index = B/A	-	
4.				Hydrophytic Vegetation Indi	cators:	
5.				Dominance Test is >50%		
6.				Prevalence Index is ≤3.0 <sup>1</sup>		
7.				Morphological Adaptation		
8.				data in Remarks or on	•	,
9.				Problematic Hydrophytic	Vegetation <sup>1</sup> (Exp	ain)
10.		-		-		
10		= Total Co		-		
Woody Vine Stratum Plot size:		- 10tal C0	vei	<sup>1</sup> Indicators of hydric soil and	wetland hydrolog	gy must
1.				be present.		
2.				Hydrophytic	-	
		= Total Co	ver	Vegetation Yes O	No 🖲	
   % Bare Ground in Herb Stratum   96 %    % Cove	er of Biotic (	Cruet 1	%	Present?		
Remarks: Artemesia tridentata to 4 feet tall. Minors				oides Agropryon cristatum	Flymus elymo	des
Juniperus monosperma, Heterotheca villo						
				IS CEVERATION AND A DEPENDENT OF A D		

cryptogamic crust community.

Depth (inches)       Matrix       Redox Features         0 - 14       7.5 YR 5/3       100       -       -       GrSi       Alluvium - cobbles         0 - 14       7.5 YR 5/3       100       -       -       GrSi       Alluvium - cobbles         -       -       GrSi       Alluvium - cobbles       -       -       -       -         -       -       -       -       -       -       -       -       -         -	Profile Des	cription: (Describe	to the depth i	needed to docu	ment the	indicator	or confirm	m the absence of indicators.)	
0 - 14       7.5 YR 5/3       100       -       -       GrSi       Alluvium - cobbles	Depth	Matrix		Redo	x Feature	S			
Image: Stratified Layers (A5) (LRR D)       Depleted Dark Surface (F6)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)         Thick Dark Surface (A12)       Redox Dark Surface (F7)         Sandy Mucky Mineral (S1)       Other (Expland)         Image: Stratified Layers (A12)       Redox Dark Surface (F7)         Stratified Layers (A12)       Selow Dark Surface (F7)         Redox Dark Surface (A12)       Redox Dark Surface (F7)         Stratified Layers (A12)       Redox Dark Surface (F7)         Thick Dark Surface (A12)       Redox Dark Surface (F7)         Standy Gleyed Matrix (S4)       Sandy Bools (F8)	(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       1 cm Muck (A9) (LRR C)         Histic Epipedon (A2)       Stripped Matrix (S6)       2 cm Muck (A10) (LRR B)         Black Histic (A3)       Loamy Mucky Mineral (F1)       Reduced Vertic (F18)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Red Parent Material (TF2)         Stratified Layers (A5) (LRR C)       Depleted Matrix (F3)       Other (Explain in Remarks)         1 cm Muck (A9) (LRR D)       Redox Dark Surface (F6)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Mucky Mineral (S1)       Vernal Pools (F9) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.         Restrictive Layer (if present):       Restrictive Layer (if present):       Image: Complete Completed Complete	0 - 14	7.5 YR 5/3	100	-	-			GrSi Alluvium - cobbles	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       1 cm Muck (A9) (LRR C)         Histic Epipedon (A2)       Stripped Matrix (S6)       2 cm Muck (A10) (LRR B)         Black Histic (A3)       Loamy Mucky Mineral (F1)       Reduced Vertic (F18)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Red Parent Material (TF2)         Stratified Layers (A5) (LRR C)       Depleted Matrix (F3)       Other (Explain in Remarks)         1 cm Muck (A9) (LRR D)       Redox Dark Surface (F6)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Vernal Pools (F9) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.         Restrictive Layer (if present):       Restrictive Layer (if present):       Image: Comparison of the present in the					  				
Histosol (A1)       Sandy Redox (S5)       1 cm Muck (A9) (LRR C)         Histic Epipedon (A2)       Stripped Matrix (S6)       2 cm Muck (A10) (LRR B)         Black Histic (A3)       Loamy Mucky Mineral (F1)       Reduced Vertic (F18)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Red Parent Material (TF2)         Stratified Layers (A5) (LRR C)       Depleted Matrix (F3)       Other (Explain in Remarks)         1 cm Muck (A9) (LRR D)       Redox Dark Surface (F6)       Depleted Dark Surface (F7)         Thick Dark Surface (A11)       Depleted Dark Surface (F7)       Redox Depressions (F8)         Sandy Gleyed Matrix (S4)       Vernal Pools (F9) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.         Restrictive Layer (if present):	<sup>1</sup> Type: C=C	concentration, D=Dep	etion, RM=Re	duced Matrix.	<sup>2</sup> Location	n: PL=Pore	Lining, R	RC=Root Channel, M=Matrix.	
Depth (inches): Remarks: No indicators. Numerous cobbles in soil pit.	Histosol Histic E Black H Hydroge Stratifie 1 cm Mi Deplete Thick D Sandy M Sandy O Restrictive Type: Depth (in	I (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) (LRR C) uck (A9) (LRR D) ed Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) Layer (if present):	S) e (A11)	Sandy Redo Stripped Ma Loamy Muc Loamy Gley Depleted M Redox Darl Depleted D Redox Dep Vernal Poo	ox (S5) atrix (S6) cky Minera yed Matrix (F3) k Surface Dark Surfac oressions (	(F2) (F6) ce (F7)		<ul> <li>1 cm Muck (A9) (LRR C)</li> <li>2 cm Muck (A10) (LRR B)</li> <li>Reduced Vertic (F18)</li> <li>Red Parent Material (TF2)</li> <li>Other (Explain in Remarks)</li> </ul> <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.	
HYDROLOGY		-							
Wetland Hydrology Indicators:				-4)					
Primary Indicators (any one indicator is sufficient) Secondary Indicators (2 or more required) U(star Marka (P1) (Piverina)			ALOF IS SUTTICIEI						
Surface Water (A1)       Salt Crust (B11)       Water Marks (B1) (Riverine)         High Water Table (A2)       Biotic Crust (B12)       Sediment Deposits (B2) (Riverine)		( )			` '				

Primary Indicators (any one in	dicator is su	fficient)		Secondary Indicators (2 or more required)			
Surface Water (A1)			Salt Crust (B11)	Water Marks (B1) (Riverine)			
High Water Table (A2)			Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)			
Saturation (A3)			Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)			
Water Marks (B1) (Nonriv	verine)		Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)			
Sediment Deposits (B2) (I	Nonriverine	)	Oxidized Rhizospheres along Livi	ng Roots (C3) Dry-Season Water Table (C2)			
Drift Deposits (B3) (Nonri	verine)		Presence of Reduced Iron (C4)	Crayfish Burrows (C8)			
Surface Soil Cracks (B6)			Recent Iron Reduction in Plowed	Soils (C6) Saturation Visible on Aerial Imagery (C9)			
Inundation Visible on Aeri	al Imagery (	B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Water-Stained Leaves (B	9)		Other (Explain in Remarks)	FAC-Neutral Test (D5)			
Field Observations:							
Surface Water Present?	Yes 🔿	No 💽	Depth (inches):				
Water Table Present?	Yes 🔿	No 💿	Depth (inches):	etland Hydrology Present? Yes 🔿 No 🖲			
Saturation Present? (includes capillary fringe)	Yes 🔿	No 💿	Depth (inches):				
Describe Recorded Data (stre None.	am gauge, n	nonitoring	well, aerial photos, previous inspec	tions), if available:			
Remarks: No hydrologic in	dicators pr	esent.					

Project/Site: Questa Mine Remediation Remov	al Action	City/Coun	ty: Questa/Tac	0S	Sar	npling Date:	10-17-20	012
Applicant/Owner: Chevron Mining, Inc.		-		State:NM	Sar	npling Point:	EDC-2	
Investigator(s): J. Dawson/ S. Hall		Section, 1	Township, Range	: T29N R12W	S36			
Landform (hillslope, terrace, etc.): Constructed ch	nannel	Local reli	ef (concave, con	vex, none): Nor	ne	SI	ope (%): <	<1
Subregion (LRR):D - Interior Deserts	Lat: 36	.707669	L	ong: -105.6098	74	Dat	um: NAI	D 83
Soil Map Unit Name: Sedillo-Silva association,	strongly sloping			NWI cla	ssificatior	n: None		
Are climatic / hydrologic conditions on the site typic			No ()	(If no, explair	ı in Rema	rks.)		
Are Vegetation Soil or Hydrology	-			rmal Circumstand		,	No	
Are Vegetation Soil Soil Soil Soil Soil Soil Soil Soil				ed, explain any a			,	$\sim$
SUMMARY OF FINDINGS - Attach site							eatures,	etc.
Hydrophytic Vegetation Present? Yes			the Sampled Ar			<u> </u>		
Hydric Soil Present? Yes	No 🔿		thin a Wetland?		lacksquare	No 🔿		
Wetland Hydrology Present? Yes	No 🔿							
Remarks: Continuation of EDC-1. Willow c channel floor. Aerial photographs recent precipitation may explain in	show area to be a undation. Soils l	inundated	or regularly p	onded. Severe	extended			
VEGETATION - Use scientific names o	•							
Tree Stratum Plot size:	Absolute <u>% Cover</u>	Dominan Species?	Status N	ominance Test lumber of Domina hat Are OBL, FA	ant Specie	es	3	(A)
2.			Т	otal Number of D	ominant			
3				pecies Across Al			3	(B)
4			P	ercent of Domina	ant Specie	s		
Sapling/Shrub Stratum Plot size:		= Total Co		hat Are OBL, FA			0.0 %	(A/B)
1. Salix exigua	8	Yes	FACW P	revalence Index	workshe	et:		
2.				Total % Cove			bly by:	
3.				BL species	3	x 1 =	3	-
4.			F	ACW species	24	x 2 =	48	
5.			F	AC species	37	x 3 =	111	
60 m 100	8	= Total Co	over F	ACU species		x 4 =	0	
Herb Stratum Plot size: 60 x 100				IPL species	1	x 5 =	5	
1. Hordeum jubatum		Yes		olumn Totals:	65	(A)	167	(B)
2. Rorippa curvipes	15	$\frac{\text{Yes}}{\text{W}}$	FACW	Prevalence I	ndex = B	/A =	2.57	
<ul><li>3. Rumex triangularis</li><li>4. Polygonum ramosissimum</li></ul>		$-\frac{No}{N}$	FACW	lydrophytic Veg			2.57	
5. Koeleria macrantha	2	- No		Cominance Te				
6. Typha angustifolia	1	- No No	Not Listed	Prevalence In				
7. Eleocharis obtusa	$\frac{1}{2}$	$-\frac{NO}{NO}$	-OBL	Morphological	Adaptatio	ons <sup>1</sup> (Provid	e supportir	ng
8.			- <u></u>			on a separat		
9.			L	Problematic H	lydrophyti	c Vegetatior	<sup>1</sup> (Explain)	)
10.								
Woody Vine Stratum Plot size: <u>N/A</u> 1.	57	= Total Co	1	ndicators of hydroid be present.	ric soil an	d wetland h	ydrology r	nust
2.				lydrophytic			-	
		= Total Co		egetation	Yes 🖲	No (	$\mathcal{O}$	
% Dans Oracinatia Ulark Otratura 15	% Cover of Biotic	Cruet		i escrit :				
% Bare Ground in Herb Stratum 45 %		Giusi	%0					

SOIL	
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Profile Des	cription: (Describe to	the depth	needed to docu	ment the i	indicator	or confirm	the absence of	indicators.)
Depth	Matrix		Redo	x Features				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 1	10YR 8/2	100	-	-			Si	
1 - 14	7.5YR 5/6	100	-	-			See Remarks	Cobbly gravelly silt
				·				
				·				
<sup>1</sup> Type: C=C	oncentration, D=Deple	tion, RM=R	educed Matrix.	<sup>2</sup> Location	: PL=Pore	e Lining, RC	C=Root Channel,	M=Matrix.
								3
	ndicators: (Applicable	to all LRRs						Problematic Hydric Soils <sup>*</sup> :
Histoso	pipedon (A2)		Sandy Redo	. ,				ck (A9) ( <b>LRR C</b> ) ck (A10) ( <b>LRR B</b> )
	listic (A3)		Loamy Mu	• •	l (F1)			Vertic (F18)
	en Sulfide (A4)		Loamy Gle	•	. ,			ent Material (TF2)
	d Layers (A5) (LRR C)	)	Depleted N	-	()			(plain in Remarks)
	uck (A9) (LRR D)		Redox Dar		(F6)			· ,
Deplete	d Below Dark Surface	(A11)	Depleted D	ark Surfac	e (F7)			
Thick D	ark Surface (A12)		Redox Dep	ressions (	F8)			
	Mucky Mineral (S1)		Vernal Poo	ls (F9)				hydrophytic vegetation and
	Gleyed Matrix (S4)						wetland hy	/drology must be present.
	Layer (if present):							
Type:							Hydric Soil Pr	resent? Yes 💿 No 🔿
Depth (in	,							
	Vegetation at pit: Ho							
P	roblematic soils - re	cently dev	eloped/seasonal	lly floode	ed (based	on aerial	photos).	
HYDROLO								
-	drology Indicators:							
Primary Indi	cators (any one indicat	tor is sufficie						ary Indicators (2 or more required)
	Water (A1)		X Salt Crust	· · ·			Wat	er Marks (B1) ( <b>Riverine</b> )
High Water Table (A2) Biotic Crust (B12)							Sed	iment Deposits (B2) ( <b>Riverine</b> )
Saturati				ivertebrate				Deposits (B3) ( <b>Riverine</b> )
	/larks (B1) ( <b>Nonriverin</b>			Sulfide O				nage Patterns (B10)
	nt Deposits (B2) (Non				-	Living Root	· · ·	Season Water Table (C2)
	posits (B3) (Nonriveri	ne)		of Reduce				yfish Burrows (C8)
	Soil Cracks (B6)					ved Soils (C		uration Visible on Aerial Imagery (C9)
	ion Visible on Aerial Im	nagery (B7)		< Surface (	,			llow Aquitard (D3)
	Stained Leaves (B9)		Uther (Ex	plain in Re	emarks)		FAC	C-Neutral Test (D5)
Field Obser	vations:							

Field Observations:									
Surface Water Present?	Yes 🔿	No 💿	Depth (inches):						
Water Table Present? Yes O No 💿		Depth (inches):		Wetland Hydrology Present?	Yes	ullet	No	О	
Saturation Present? Yes No  Depth (inches):									
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Aerial photos show inund	ation in dry	pond.							

Remarks:

Project/Site: Questa Mine Remediation Removal Action	City/County: Questa/Taos	3	Sampling Date: 10-	-17-2012
Applicant/Owner: Chevron Mining, INC.		State: <u>NM</u>	Sampling Point: EI	DC-3
Investigator(s): J. Dawson/ S. Hall	Section, Township, Range:	T29N R12W S36		
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, conv	ex, none): Terrace	Slope	(%): 45
Subregion (LRR): D - Interior Deserts Lat: 36	.708668 Lo	ng: -105.609575	Datum:	NAD83
Soil Map Unit Name: Sedillo-Silva association, strongly sloping		NWI classific	ation: None	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes 💿 No 🔿	(If no, explain in Re	emarks.)	
Are Vegetation Soil or Hydrology significantly	/ disturbed? Are "Nor	mal Circumstances" p	oresent? Yes 💿	No 🔿
Are Vegetation Soil X or Hydrology naturally pr	oblematic? (If neede	d, explain any answei	rs in Remarks.)	
SUMMARY OF FINDINGS - Attach site map showing	sampling point locat	tions, transects,	important feat	ures, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	• • •	No No No	0000	Is the Sampled Area within a Wetland? Yes  No	
Remarks: PEM/PSS wetland forme	d from	a hill	side sn	rino	Spring outflows to Eastern Diversion Channel No distinct channel T	hree

Remarks: PEM/PSS wetland formed from a hillside spring. Spring outflows to Eastern Diversion Channel. No distinct channel. Three additional spring wetlands occur north of this feature.

## **VEGETATION - Use scientific names of plants.**

	Absolute	Dominant		Dominance Test w	orksheet	t:		
Tree Stratum Plot size:	% Cover	Species?	Status	Number of Dominar				
1				That Are OBL, FAC	W, or FA	C: 3	j.	(A)
2				- Total Number of Do	minant			
3.				Species Across All		3	ś	(B)
4.				Demonst of Deminer				
		= Total Co	ver	<ul> <li>Percent of Dominar</li> <li>That Are OBL, FAC</li> </ul>			0.0 %	(A/B)
Sapling/Shrub Stratum Plot size: 30 x 20				1110(7410 002, 1710		0. 100	7.0 70	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1.Salix exigua	10	Yes	FACW	Prevalence Index	workshee	et:		
2. Populus angustifolia	5	Yes	FACW	Total % Cover	of:	Multip	y by:	-
3. Eleagnus angustifolia	2	No	OBL	OBL species	2	x 1 =	2	
4.				FACW species	95	x 2 =	190	
5.				FAC species		x 3 =	0	
	17	= Total Co	ver	FACU species	10	x 4 =	40	
Herb Stratum Plot size: 30 x 20	1			UPL species	10	x 5 =	0	
1. Agrostis stolonifera	80	Yes	FACW	Column Totals:	107	(A)	232	(B)
2. Bromus inermis	10	No	FACU	-	10,			. ,
3.	_			Prevalence In	dex = B//	A =	2.17	
4.				Hydrophytic Vege	tation Inc	licators:		
5.		·		X Dominance Te	st is >50%	6		
6.				Prevalence Ind	ex is ≤3.0	) <sup>1</sup>		
7.				Morphological	Adaptatio	ns <sup>1</sup> (Provide	supporti	ng
8.				data in Rem		•		`
9.				Problematic Hy	arophytic	vegetation	(Explain	)
10.			·	-				
	90	= Total Co	ver			المعرفة المعرفة		
Woody Vine Stratum Plot size:				<sup>1</sup> Indicators of hydrid be present.	s soir and	i wetiand ny	arology r	nust
1								
2				│ Hydrophytic ─│ Vegetation ── Υ	es 💿	No	·	
		= Total Co	ver	Present?	5	NO		
	er of Biotic (		%					
Remarks: Predominantly PEM around spring with s	ingle sten	ns of Salix	exigua. P	opulus angustifolia	and Elea	ignus angu	stifolia l	ine
the perimeter of the feature.								

SOIL
------

Profile Des	cription: (Describe	to the dep	th needed to docu	nent the	e indicator	or confirm	n the absence of indicators.)		
Depth	Matrix			x Featur					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks		
0 - 5	10YR 4/2	100	-	-			Cl Organic streaking		
5 - 14	2.5YR 6/3	80	10YR 6/8	20	С	М	Cl		
				·		·			
		· ·				·			
$\frac{1}{1}$ Type: C=C	Concentration, D=Dep	letion RM=	Reduced Matrix		on: PI =Por	Lining R	C=Root Channel, M=Matrix.		
1,90. 0 0		iouon, run		Loouin		5 Ennig, TV			
Hydric Soil I	ndicators: (Applicabl	le to all LR	Rs, unless otherwise	noted.)			Indicators for Problematic Hydric Soils <sup>3</sup> :		
Histoso			Sandy Redo				1 cm Muck (A9) ( <b>LRR C</b> )		
	pipedon (A2)		Stripped Ma	atrix (S6)	)		2 cm Muck (A10) ( <b>LRR B</b> )		
	listic (A3)		Loamy Muc	-			Reduced Vertic (F18)		
	en Sulfide (A4)	•	Loamy Gley		. ,		Red Parent Material (TF2)		
	d Layers (A5) ( <b>LRR (</b> uck (A9) ( <b>LRR D</b> )	(م	Depleted M	•			X Other (Explain in Remarks)		
	ed Below Dark Surface	e (A11)	Depleted D		( )				
	ark Surface (A12)	0 (/ 11 / )	Redox Dep		( )				
	Mucky Mineral (S1)		Vernal Poo		()		<sup>3</sup> Indicators of hydrophytic vegetation and		
Sandy (	Gleyed Matrix (S4)			. ,			wetland hydrology must be present.		
Restrictive	Layer (if present):								
Type:							Hydric Soil Present? Yes 🔿 No 🖲		
Depth (in	iches):								
Remarks: V	egetation at pit: Ag	grostis sto	lonifera.						
P	roblematic soil - re	ecently de	veloped wetland.						
		-	-						
HYDROLO	)GY								
Wetland Hy	drology Indicators:								
Primary Indi	cators (any one indic	ator is suffi	cient)				Secondary Indicators (2 or more required)		

Finally mulcators (any one indicator is sufficient)		<u>Secondary indicators (2 or more required)</u>
X Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
X Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Roots (C3) X Dry-Season Water Table (C2)	
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils	s (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes  No	Depth (inches): 1	
Water Table Present? Yes  No	Depth (inches): 10	etland Hydrology Present? Yes 💿 No 🔿
Saturation Present? Yes  No  (includes capillary fringe)	Depth (inches): 0	
Describe Recorded Data (stream gauge, monitori	ng well, aerial photos, previous inspections	s), if available:
Channel, but no evidence of flow d		illslope. Spring outflows to the Eastern Diversion erved. Three other seeps and springs were observed

Project/Site: Questa Mine Remediati	City/County:	Questa/Taos		Sampling Date	: 10-18-2012		
Applicant/Owner: Chevron Mining, I			State:NM	Sampling Poin	EDC-3-UP		
Investigator(s): J. Dawson/ S. Hall	Section, Tow	nship, Range:_]	29N R12W S36	5			
Landform (hillslope, terrace, etc.): Hills	Local relief (	concave, convex	, none): Terrace	S	lope (%):		
Subregion (LRR): D - Interior Deserts Lat: 36.			36.699571	Long	-105.619925	Da	tum: NAD83
Soil Map Unit Name: Sedillo-Silva association, strongly sloping NWI classification: None							
Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)							
Are Vegetation Soil or H	lydrology	significar	ntly disturbed?	Are "Norma	I Circumstances"	present? Yes (	No 🔿
Are Vegetation Soil or H	lydrology	naturally	problematic?	(If needed,	explain any answe	ers in Remarks.)	
SUMMARY OF FINDINGS - A	tach site ma	ıp showi	ng sampling	point locatio	ons, transects	, important f	eatures, etc.
Hydrophytic Vegetation Present?	Yes 🔿	No 💿	Is the	Sampled Area			
Hydric Soil Present?	Yes 🔿	No 💿		a Wetland?	Yes 🔿	No 🖲	
Wetland Hydrology Present?	Yes 🔿	No 💿					
Remarks: Upland soil pit for EDC	-3.						

## **VEGETATION - Use scientific names of plants.**

	Absolute		Indicator	Dominance Test worksheet:	
Tree Stratum Plot size:	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: $0$ (A)	
2				- Total Number of Dominant	
3				Species Across All Strata: 3 (B)	
4.				<ul> <li>Percent of Dominant Species</li> </ul>	
Sapling/Shrub Stratum Plot size: 20 x 20		= Total Co	over	That Are OBL, FACW, or FAC: 0.0 % (A/B)	
1. Artemisia tridentata	54	Yes	Not Listed	Prevalence Index worksheet:	
2. Ericameria nauseosus	10	No	Not Listed	Total % Cover of: Multiply by:	
3. Juniperus monosperma	3	No	Not Listed	OBL species x 1 = 0	
4.			_	FACW species $x 2 = 0$	
5.				FAC species x 3 = 0	
	67	= Total Co	over	FACU species x 4 = 0	
Herb Stratum Plot size: 20 x 20				UPL species $40 \times 5 = 200$	
1. Agropyron cristatum	25	Yes	Not Listed	Column Totals: 40 (A) 200 (B)	
2. Thinopyrum intermedium	12	Yes	Not Listed		
3. Heterotheca villosa	2	No	Not Listed	Prevalence Index = $B/A = 5.00$	
4. Bahia absinthifolia	1	No	Not Listed	Hydrophytic Vegetation Indicators:	
5.				Dominance Test is >50%	
6.				Prevalence Index is $\leq 3.0^1$	
7.				Morphological Adaptations <sup>1</sup> (Provide supporting	
8.				- data in Remarks or on a separate sheet)	
9.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
10.				-	
Woody Vine Stratum Plot size:	40	= Total Co	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.	
1				-	
2		= Total Co	 over	<ul> <li>Hydrophytic</li> <li>Vegetation Yes ○ No ●</li> <li>Present?</li> </ul>	
	er of Biotic (		%		
Remarks: Artemisia tridentata heights to 6 feet. Ba	re ground	includes u	up to 14 pe	ercent moss.	

Profile Desc	cription: (Describe	o the dept	h needed to docu	ment the i	ndicator	or confirm	the absence of indica	tors.)
Depth	Matrix			x Features				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 13	7.5YR 4/4	100	-	-			SaGrLo	
<u></u>								
'Type: C=C	oncentration, D=Depl	etion, RM=I	Reduced Matrix.	<sup>2</sup> Location	: PL=Pore	Lining, R	C=Root Channel, M=Mat	trix.
								······································
Hydric Soil I Histosol	ndicators: (Applicabl	e to all LRR	·	•			Indicators for Problem	
	pipedon (A2)		Sandy Redo	• •			2 cm Muck (A9)	. ,
	istic (A3)			• •	I (F1)		Reduced Vertic	, , ,
	en Sulfide (A4)		Loamy Gle	-			Red Parent Mate	. ,
	d Layers (A5) (LRR C	:)	Depleted M	-	(1 2)		Other (Explain in	
	uck (A9) (LRR D)	')	Redox Dar	· · ·	(F6)			(Remarks)
	d Below Dark Surface	e (A11)			. ,			
	ark Surface (A12)	()	Redox Dep		. ,			
	Aucky Mineral (S1)		Vernal Poo		••)		<sup>3</sup> Indicators of hydrop	hytic vegetation and
	Gleyed Matrix (S4)						• •	/ must be present.
	Layer (if present):							•
Type:							Hydric Soil Present?	Yes 🔿 No 💿
Depth (in	ches):							
• •	o indicators. Vege	tation at n	it: Thinopyrum i	intermedi	um			
	e mareatorist vege	tution ut p						
HYDROLO	GY							
	drology Indicators:							
-	cators (any one indica	tor is suffic	iont)				Socondary India	cators (2 or more required)
_			_	+ (D11)				
	Water (A1)		Salt Crust	` '				(S (B1) ( <b>Riverine</b> )
	ater Table (A2)		Biotic Cru	` '	o (D10)			Deposits (B2) ( <b>Riverine</b> )
Saturati	( )	,	·	vertebrate	` '			its (B3) ( <b>Riverine</b> )
Water M	/larks (B1) ( <b>Nonriveri</b>	ne)	Hydrogen	Sulfide Oc	dor (C1)		Drainage P	atterns (B10)

Wetland Hydrology Indicators:				
Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)		
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)		
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)		
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) ( <b>Riverine</b> )		
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)		
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living Roots (C3	) Dry-Season Water Table (C2)		
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)		
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)		
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes O No 🖲	Depth (inches):			
Water Table Present? Yes O No 🖲	Depth (inches): Wetland Hy	/drology Present? Yes 🔿 No 🖲		
Saturation Present? Yes No ( (includes capillary fringe)	Depth (inches):			
Describe Recorded Data (stream gauge, monitori	ng well, aerial photos, previous inspections), if avail	able:		
Remarks: No hydrologic indicators present.				

Project/Site: Questa Mine Remediation Remov	al Action	City/Cour	nty: Questa/	Taos	Sar	mpling Date:	10-18-20	)12
Applicant/Owner: Chevron Mining, Inc.		-		State:NM	Sar	npling Point:	EDC-6	
Investigator(s): J. Dawson/ S. Hall		Section,	Township, Ra	ange: T29N R12W S	36	-		
Landform (hillslope, terrace, etc.): Constructed ch	nannel	Local rel	lief (concave,	convex, none): None		Slo	ope (%): <	:1
Subregion (LRR):D - Interior Deserts	Lat: 36	5.704765		Long: -105.609659		Dati	um: NAD	83
Soil Map Unit Name: Sedillo-Silva association,	strongly sloping	5		NWI class	ificatior	n: None		
Are climatic / hydrologic conditions on the site typic	al for this time of y	ear? Yes	No (	(If no, explain in	Rema	rks.)		
Are Vegetation Soil or Hydrology	-			"Normal Circumstances			No	$\bigcirc$
Are Vegetation Soil or Hydrology		-		eeded, explain any ans				
SUMMARY OF FINDINGS - Attach site							atures,	etc.
Hydrophytic Vegetation Present?YesHydric Soil Present?YesWetland Hydrology Present?Yes	No 🖲		the Sampled thin a Wetla			No 🖲		
Remarks: Continuation of EDC-1 and EDC-2 and EDC-2. Marginal wetland veg six years aerials are available, but r	getation: lack of no other hydrolo	hydric so	ils. Previou	s aerial photography				
VEGETATION - Use scientific names o	•							
Tree Stratum Plot size:	Absolute <u>% Cover</u>		nt Indicator ? <u>Status</u>	Dominance Test wo Number of Dominant That Are OBL, FACV	Specie	es	1 (	(A)
2 3				- Total Number of Don Species Across All S		2	2 (	(B)
4		= Total C	over	- Percent of Dominant That Are OBL, FACV			).0 % (	A/B)
Sapling/Shrub Stratum Plot size:1.				Prevalence Index w	orkshe	et.		
2.				Total % Cover of		Multip	lv bv:	
3.				OBL species		x 1 =	0	
4.				FACW species	37	x 2 =	74	
5.				FAC species	6	x 3 =	18	
		= Total C	over	FACU species	24	x 4 =	96	
Herb Stratum Plot size: 60 x 100				UPL species	3	x 5 =	15	
1. Heleanthus annuus	22	$-\frac{\text{Yes}}{W}$	FACU	Column Totals:	70	(A)	203	(B)
<ul><li>2. Polygonum aviculare</li><li>3. Persicaria penslyvanica</li></ul>	$\frac{30}{5}$	$-\frac{\text{Yes}}{\text{No}}$	FACW FACW	Prevalence Ind	ex = B	/A =	2.90	
<ul><li>4. Hordeum jubatum</li></ul>		$-\frac{100}{No}$	FAC W	Hydrophytic Vegeta	tion In	dicators:		
5. Polygonum ramosissimum	$\frac{3}{3}$	$-\frac{100}{No}$	FAC	Dominance Test	is >50	%		
6. Conyza canadensis	$\frac{1}{2}$	No	FACU	× Prevalence Inde	x is ≤3.	0 <sup>1</sup>		
7. Rumex triangularis	2	No	FACW	Morphological A	daptatio	ons <sup>1</sup> (Provide	e supportir	ng
8. Bromus japonicus	1	No	Not Listed	data in Rema		•		<b>`</b>
9. Thinopyrum intermedium	2	No	Not Listed		. opnyti			/
10.           Woody Vine Stratum         Plot size:           1.	70	= Total C	over	<sup>1</sup> Indicators of hydric be present.	soil an	d wetland hy	ydrology n	nust
2				Hydrophytic	~		_	
% Bare Ground in Herb Stratum $30$ %	% Cover of Biotic	= Total C	over %	Vegetation Yes Present?	s 🖲	No(		
Remarks: Minors include Grindelia squarrosa				<u> </u>				

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3	ᇧᆫ

Profile Des	cription: (Describe to	the depth	needed to docu	ment the indicator	or confirm	the absence	of indicators.)	
Depth	Matrix			x Features				
(inches)	Color (moist)	%	Color (moist)	<u>%</u> <u>Type<sup>1</sup></u>	Loc <sup>2</sup>	Texture	Remarks	
0 - 9	10YR 5/3	100				SiCL	Dry	
9 - 14	10YR 5/3	100				SiCL	Mixed with tailings	
<sup>1</sup> Type: C=C	Concentration, D=Deple	tion, RM=R	educed Matrix.	<sup>2</sup> Location: PL=Pore	e Lining, RC	C=Root Chann	nel, M=Matrix.	
							2	
	Indicators: (Applicable	to all LRRs					for Problematic Hydric Soils:	
Histoso	l (A1) Epipedon (A2)		Sandy Redo	. ,			Auck (A9) (LRR C)	
	listic (A3)			cky Mineral (F1)			/luck (A10) ( <b>LRR B</b> ) ed Vertic (F18)	
	en Sulfide (A4)			yed Matrix (F2)			arent Material (TF2)	
	ed Layers (A5) (LRR C)	1	Depleted M			Other (Explain in Remarks)		
1 cm M	uck (A9) (LRR D)		Redox Darl	k Surface (F6)				
	ed Below Dark Surface	(A11)	Depleted D	ark Surface (F7)				
	ark Surface (A12)		·	ressions (F8)				
	Mucky Mineral (S1)		Vernal Poo	ls (F9)			of hydrophytic vegetation and	
	Gleyed Matrix (S4)					wetland	hydrology must be present.	
	Layer (if present):					Undria Cail	Present? Yes No 🖲	
Type:	aboo):					Hydric Soli	Present? Yes No 💿	
Depth (ir	· · · · · · · · · · · · · · · · · · ·	has soil r	aived with evid	ized rock no real	raduction	or concentre	ations observed. Part of this area has	
							l indicators consistent with the	
	narginal hydric indic	-	-		y gopher i	nounus. boi	i indicators consistent with the	
HYDROLC	DGY							
Wetland Hy	/drology Indicators:							
Primary Indi	icators (any one indica	or is sufficie	ent)			Secor	ndary Indicators (2 or more required)	
Surface	e Water (A1)		Salt Crust	: (B11)		N []	Vater Marks (B1) ( <b>Riverine</b> )	
High W	ater Table (A2)		Biotic Cru	st (B12)		s	ediment Deposits (B2) (Riverine)	
Saturat	ion (A3)		Aquatic In	vertebrates (B13)			prift Deposits (B3) ( <b>Riverine</b> )	
Water M	Marks (B1) (Nonriverin	e)	Hydrogen	Sulfide Odor (C1)			rainage Patterns (B10)	
Sedime	ent Deposits (B2) ( <b>Non</b>	riverine)	Oxidized I	Rhizospheres along	Living Root	ts (C3) 🗍 D	Pry-Season Water Table (C2)	
Drift De	eposits (B3) ( <b>Nonriveri</b>	ne)	Presence	of Reduced Iron (C4	4)	C	rayfish Burrows (C8)	
Surface	e Soil Cracks (B6)			on Reduction in Plov	ved Soils (C	(6) S	aturation Visible on Aerial Imagery (C9)	
X Inundat	tion Visible on Aerial Im	agery (B7)		< Surface (C7)		S	hallow Aquitard (D3)	
Water-S	Stained Leaves (B9)		Other (Ex	plain in Remarks)		F	AC-Neutral Test (D5)	

Field Observations:							
Surface Water Present?	Yes 🔿	No 💽	Depth (inches):				
Water Table Present?	Yes 🔿	No 💿	Depth (inches):	Wetland Hydrology Present? Yes O No 💿			
Saturation Present? (includes capillary fringe)	Yes 🔿	No 💿	Depth (inches):				
	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Three of six photos available show inundation.							
Remarks: Aerial taken in summers of 2004, 2009 and 2010 show this feature to be flooded. Currently, no evidence of an OHWM, channeling, or drainage patterns observed within the feature. Soil cracking consistent with dry soil observations in this area, does not resemble cracks from ponding.							

FINAL

# HISTORIC TAILING SPILLS REMOVAL ACTION COMPLETION REPORT CHEVRON QUESTA MINE SUPERFUND SITE

**Revision** 1

Prepared for Chevron Mining Inc. Questa, New Mexico

September 26, 2014



URS Corporation 8181 E. Tufts Avenue Denver, CO 80237

Project No. 22242874

DRAFT

# LOWER DUMP SUMP WETLAND DELINEATION REPORT CHEVRON QUESTA MINE SUPERFUND SITE

**Revision** 0

Prepared for Chevron Mining Inc. Questa, New Mexico

February 5, 2014



URS Corporation 8181 E. Tufts Avenue Denver, CO 80237

Project No. 22242874

## 1.0 INTRODUCTION

URS conducted a wetland delineation on July 24, 2013 to support removal of the historic tailing spill at the Lower Dump Sump (LDS). Wetland delineation is the evaluation process used to determine whether wetlands meeting the Section 404 definition are present or absent in an area, as described in *the Overall Site Plan for Removal Actions, Chevron Questa Mine Superfund Site* (URS 2012).

Tailing was removed at the LDS site in 2013 under the United States Environmental Protection Agency (EPA) Administrative Settlement Agreement and Order on Consent for Removal Actions, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Docket No. 06-09-12 and its appended Statement of Work (EPA 2012). During the EPA final inspection of the removal at the LDS, EPA requested an exploratory trench down-gradient and west of the LDS to evaluate whether tailing was present in that area. Because the area was observed to contain potential wetland vegetation, EPA requested wetland delineation be conducted prior to excavation of the exploratory trench.

No wetlands were identified. A map of the study is provided in Attachment A.

## 2.0 SITE DESCRIPTION

The study area for the delineation included about 2 acres of land west of the LDS, including about 300 feet of the Gallegos Ditch, wooded and shrubby areas along the ditch and in the Red River riparian area, and meadows. The study area boundary is shown on Figure 1, along with the location of soil pit locations and the exploratory trench. The study area extended about 250 feet west from the edge of the LDS to the edge of the property and included a minimum of 100 feet along the southwestern and western edge of the LDS. It was designed to include potential areas that could be affected by excavation of an exploratory trench and a minimum 50 foot buffer. Photographs of the study area are provided in Attachment B.

## <u>Soils</u>

Three soil map units are present within the study area, according to soils maps included in the Soil Survey of Taos County and Parts of Arriba and Mora Counties [Natural Resource Conservation Service (NRCS) 2013]. Tenorio loam, 0 to 3 percent slopes and 1 to 5 percent slopes, are soils of valley sides. They are deep, well-drained non-saline soils that are formed in alluvium derived from igneous and metamorphic rock. They are classified as farmland of statewide importance. Based on the NRCS 1:24,000 scale mapping, they occupy most of the study area. A small portion of the study area on the north edge is mapped as Fluvents, nearly level. These are deep, well-drained, non-saline soils comprised of gravelly sand, with a water table at 0 to 24 inches below ground surface. They occur on floodplains. About 20 percent of the Fluvents map unit has a loam or clay loam subsoil.

## **Vegetation**

Vegetation types present in the study area include riparian woodland and shrub, mesic meadow, wet meadow, disturbed, and upland shrub. All of the vegetation types have been strongly affected by past human activities or result from human activity.

**Riparian Woodland and Shrub** occupies most of the northern third of the study area and is part of a large area of riparian woodland (bosque) associated with the Red River at Questa. Common species in these areas are listed below in Table 1. The common grass species are non-native, while the shrubs and trees are all native. The wetland status of the common species ranges from upland (UPL) to facultative wetland species (FACW).

Name	Species	Wetland Indicator <sup>1</sup>					
Grasses and Grass-like Pla	Grasses and Grass-like Plants						
Creeping wildrye	Elymus repens	FAC					
Kentucky bluegrass	Poa pratensis	FAC					
Shrubs and Trees							
Deciduous traveller's joy	Clematis ligusticifolia	FAC					
Narrow-leaf cottonwood	Populus angustifolia	FACW					
Chokecherry	Prunus virginiana	FACU					
Woods' rose	Rosa woodsii	FACU					
Narrow-leaf willow	Salix exigua	OBL					
Round-leaf snowberry	Symphoricarpos rotundifolius	UPL					

Table 1Common Species in Riparian Woodland and Shrub

<sup>1</sup>Lichvar 2013.

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%) Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%)

Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%) Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

**Mesic meadow** vegetation occupies most of the study area. Mesic meadow vegetation occurs on relatively level areas on both sides of the Gallegos Ditch. The vegetation is a mixture of grasses and forbs, and of native and non-native species. Forbs provide a larger portion of the cover than grasses. Thickets of the shrub Wood's rose (*Rosa woodsii*) occur in two areas.

Most of the common species are facultative (FAC) indicators, meaning they occur equally in wetland and non-wetland areas, but indicator status ranges from UPL to FACW. The majority of vegetation cover is comprised of wetland indicator species (FAC and FACW). Several of the common species are non-native including smooth brome (*Bromus inermis*), creeping wildrye (*Elymus repens*), Kentucky bluegrass (*Poa pratensis*), and Mexican fireweed (*Kochia scoparia*). Common species are listed in Table 2.

Name	Species	Wetland Indicator <sup>1</sup>
Grasses and Grass-like Plants		
Sleepygrass	Acnatherum robustum	UPL
Smooth brome	Bromus inermis	FAC
Creeping wildrye (quackgrass)	Elymus repens	FAC
Smooth scouring rush	Equisetum laevigatum	FACW
Kentucky bluegrass	Poa pratensis	FAC
Forbs	l	
Tarragon	Artemisia dracunculus	UPL
Mexican fireweed	Bassia scoparia	FAC
Shrubs	1	1
Woods' rose	Rosa woodsii	FACU

Table 2Common Species in Mesic Meadow

<sup>1</sup>Lichvar 2013

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%) Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%) Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%)

Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

**Wet meadow** vegetation occurs in limited and narrow areas within and along the banks of the Gallegos Ditch. Common species in these areas are listed in the Table 3. Most of the vegetation in these areas was comprised of FAC and obligate (OBL) wetland indicators, and therefore these areas were evaluated in the wetland delineation, as described in Section 4.0 Results. Several of the common species are non-native, including spreading bent, common timothy and Kentucky bluegrass. Other portions of the Gallegos Ditch banks were dominated by non-wetland vegetation.

Table 3Common Species in Wet Meadow

Name	Species	Wetland Indicator <sup>1</sup>
Grasses and Grass-like Plants		
Spreading bent	Agrostis stolonifera	FAC
Water sedge	Carex aquatilis	OBL
Nebraska sedge	Carex nebrascensis	OBL

Name	Species	Wetland Indicator <sup>1</sup>
Common timothy	Phleum pretense	FAC
Kentucky bluegrass	Poa pratensis	FAC
Shrubs		
Wood's rose	Rosa woodsii	FACU

Table 3Common Species in Wet Meadow

<sup>1</sup>Lichvar 2013

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%) Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%) Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%) Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

**Disturbed** occurs at the edge of the northern portion of the study area and west of the Gallegos Ditch at the former Reddell residence. It occurs around the former residence, a shed, former canal, and driveway. Vegetation is patchy with nearly 50 percent bare ground. A large number of species are present but most occur in limited amounts. The vegetation includes both native and introduced species, but the most common species are weedy. Wetland indicator status ranges from FAC to UPL. All of the common species are non-native with the exception of narrow-leaf willow (*Salix exigua*) and mealy goosefoot (*Chenopodium incanum*). Common species are shown in Table 4.

Name	Species	Wetland Indicator <sup>1</sup>	
Grasses and Grass-like Plants			
Quackgrass, creeping wild-rye	Elymus repens	FAC	
Forbs			
Mexican fireweed	Bassia scoparia	FAC	
Mealy goosefoot	Chenopodium incanum	UPL	
Tall hedge-mustard	Sisymbrium altissumum	FACU	
Shrubs			
Narrow-leaf willow	Salix exigua	FACW	

Table 4Common Species in Disturbed

<sup>1</sup>Lichvar 2013

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%)

Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%) Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%) Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%) Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

**Upland shrub** occurs on slopes at the south end of the study area. The only wetland indicator species are weedy FAC species, including Mexican fireweed and Russian olive. Scattered Russian olive (*Elaeagus angustifolia*) and Rocky Mountain juniper (*Juniperus scopulorum*) trees are present. Most of the species are native. Common species are listed in Table 5.

Species	Name	Wetland Indicator <sup>1</sup>
Grasses and Grass-like Plants		
Blue grama	Bouteloua gacilis	UPL
Forbs		
Tarragon	Artemisia dracunculus	UPL
Mexican fireweed	Bassia scoparia	FAC
Shrubs and Trees		
Fringed sage	Artemisia frigida	UPL
Rubber rabbitbrush	Ericameria nauseosa	UPL
Russian olive	Elaeagnus angustifolia	FAC
Rocky Mountain juniper	Juniperus scopulorum	UPL
Twisted spine prickly pear	Opuntia macrorhiza	UPL

Table 5Common Species in Upland

<sup>1</sup>Lichvar 2013

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%) Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%)

Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%) Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

### **Hydrology**

The study area is located in the Upper Rio Grande Watershed (HUC 13020101) and is a short distance from the Red River. The only feature mapped by the National Wetlands Inventory (NWI) (USFWS 2010) in the study area is Gallegos Ditch. Gallegos Ditch is mapped as R4SBC – riverine, intermittent, streambed, seasonally flooded, which is consistent with observations

made during the delineation. The NWI map unit includes two small drainages that are intercepted by the Gallegos Ditch outside of the study area. The Gallegos Ditch originates from the Red River just east of the LDS, and terminates in uplands just east of Four Hill Road, west of the study area. Its' total length is about 2, 900 feet, of which about 300 feet are located within the study area.

### Wildlife

American elk (*Cervus elaphi*) droppings were common in the study area. A number of bird species were observed, including black-billed magpie (*Pica pica*), American kestrel (*Falco sparverius*), house wren (*Troglodytes aedon*), and violet-green swallow (*Tachycineta thalassina*).

### 3.0 METHODS

The study area was determined in the field by including potential areas that could be affected by excavation of an exploratory trench and a minimum 50 foot buffer. Field maps were created with ESRI<sup>®</sup> ArcGIS<sup>®</sup> software (1 inch equals 50 feet). Pre-field research included review of NWI maps, detailed air photos, topographic maps (USGS 1995), and previous environmental reports from the area.

The wetland delineation was conducted on July 24, 2013, by Jeffrey Dawson and Eric Bunnell. Wetland delineations were conducted using the Routine Determination protocol discussed in the *Corps of Engineers Wetland Delineation Manual Technical Report 4-87-1* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coasts* (Environmental Laboratory 2010). Wetlands are identified in the field as areas having positive evidence of three environmental parameters: hydric soils, wetland hydrology, and greater than five percent hydrophytic vegetation. Data for potential wetlands (Attachment C) were recorded on wetland data forms provided in the regional supplement.

Surface water features (i.e., streams and ponds) were identified by the presence of a defined bed and bank, evidence of an ordinary high water or bankfull indicator, and less than 50 percent vegetative cover within the bed. Field information recorded for surface water features included depth and width of the average ordinary high water mark, average bankfull depth, bank slope, substrate composition, source of hydrology, dominant vegetation, other vegetation, percent overstory, and any wildlife or their signs observed.

Locations of soil pits and other GPS data were recorded using a Trimble® sub-meter hand-held global positioning system (GPS). Photographs were taken of each feature. Unique identifiers were assigned to each feature delineated based on location. For example, the first potential wetland was assigned a unique identifier of WL-1.

Plant species were identified using Allred and Ivey (2012) and other botanical sources. Plant names follow Lichvar (2013) for wetland indicator species, and Allred (2003) for common names of upland species.

### 4.0 RESULTS

No wetlands were delineated in the study area and one surface water feature (Gallegos Ditch) was delineated. Based on an initial reconnaissance, two potential wetlands were identified – an

herbaceous area (WL-1) along a portion of the Gallegos Ditch and a scrub-shrub area (WL-2) below a section of the ditch. During the field assessment, these areas did not meet the requirements to be considered wetlands under the applicable Corps Manuals because they lacked indicators for soils and hydrology.

The potential herbaceous wetland area is identified as WL-1 in the data sheets and is shown in Photos 1 and 2 in Attachment B. This was an area about 75 feet long and about 2 to 3 feet wide on each side of the Gallegos Ditch in the central part of the study area. The area of potential wetland was bounded by the open water of the ditch and by raised berms of soil and sediment excavated from the ditch, which are visible on the aerial photo. The vegetation was dominated by hydrophytic sedges and grasses, with all 3 dominant species having wetland indicators, Nebraska sedge, Kentucky bluegrass and timothy. Three soil pits were dug and no hydric soil indicators were found. No water or saturation was found in the soil pits, and no evidence of hydrology was found in vegetated areas immediately adjacent to Gallegos Ditch. The irrigation channel was flowing at the time of the survey, but did not provide wetland hydrology to adjoining soils.

The potential scrub-shrub wetland area (WL-2 in the data sheets) consisted of a dense thicket of narrow-leaf willow located on a slope the east side of Gallegos Ditch and extending to the terrace below the ditch (Attachment B Photos 4 and 5). The vegetation was hydrophytic, with 3 of 4 species having wetland indicators, including narrow-leaf willow, deciduous traveller's joy (*Clematis ligusticifolia*), and Kentucky bluegrass. One soil pit was dug, located at the bottom of the slope about 5 feet vertically below Gallegos Ditch. No soil or hydrology indicators were observed. There was no observed evidence of overflow, leaks, or seepage from the ditch.

Water flowing in Gallegos Ditch was about 4 feet wide, about 8 inches deep, and flowing slowly at the time of the survey. The ditch is mostly elevated above the surrounding terrace in the study area. More information is provided on the surface water features data sheet in Attachment C. There were no irrigation turnouts or places that appeared to regularly receive irrigation in the study area. According to the US Geological Survey (USGS) map (USGS 1995) and air photos, Gallegos Ditch ends in an upland area. The downstream portions of the ditch were not observed during this field survey.

In addition to WL-1 and WL-2, the meadows and riparian forest in the study area were also dominated by plant species that are considered hydrophytic, including several meadow grasses, a common annual weed (Mexican fireweed), and the dominant tree species in the Red River riparian area (narrowleaf cottonwood, *Populus angustifolia*). These areas were not addressed in data sheets because they had no FACW or OBL species with the exception of narrowleaf cottonwood; there was no evidence of wetland hydrology with the exception of yellow sediment discussed below; and soils were non-hydric.

Thin deposits of yellow sediment were found on vegetation and surface soils along the ditch and in the meadow north of the ditch (Attachment B, Photo 10. The sediment deposits appear to have resulted from a recent storm event that sent excess water down the ditch from the Red River and overtopped the edges of the ditch. There was no apparent relationship between areas of sediment deposition and presence of wetland plant species. The sediment deposits and presumed overtopping were interpreted as an uncommon event that does not result in wetland hydrology.

### 5.0 CONCLUSION

No wetlands were delineated in the study area. Gallegos Ditch was delineated as an "other water" feature, and may be under the jurisdiction of the Clean Water Act.

### 6.0 LITERATURE CITED

Allred, Kelly W. 2003. A Working Index of New Mexico Vascular Plant Names. New Mexico State University Range Science Herbarium.

Allred, Kelly W., and Robert DeWitt Ivey. 2012. Flora Neomexicana III: An Illustrated Identification Manual. Available at <u>www.lulu.com</u>

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual Technical Report Y-87-1. Prepared for the US Army Corps of Engineers, Washington, DC. Final Report. January.

Environmental Laboratory. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coasts (Version 2.0). ERDC/EL TR-10-3. U.S. Army Engineer Research and Development Center, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199. May.

Environmental Protection Agency. 2012. In re Chevron Mining Inc., Administrative Settlement Agreement and Order on Consent for Removal Actions, Chevron Questa Mine Superfund Site, Questa, New Mexico. CERCLA Docket 06-09-12 CERCLIS ID No. NMD002899094. March 8.

Natural Resource Conservation Service. 2013. Soil Survey of Taos County and Parts of Rio Arriba and Mora Counties, New Mexico. Version 9, December 27, 2013. Natural Resources Conservation Service.

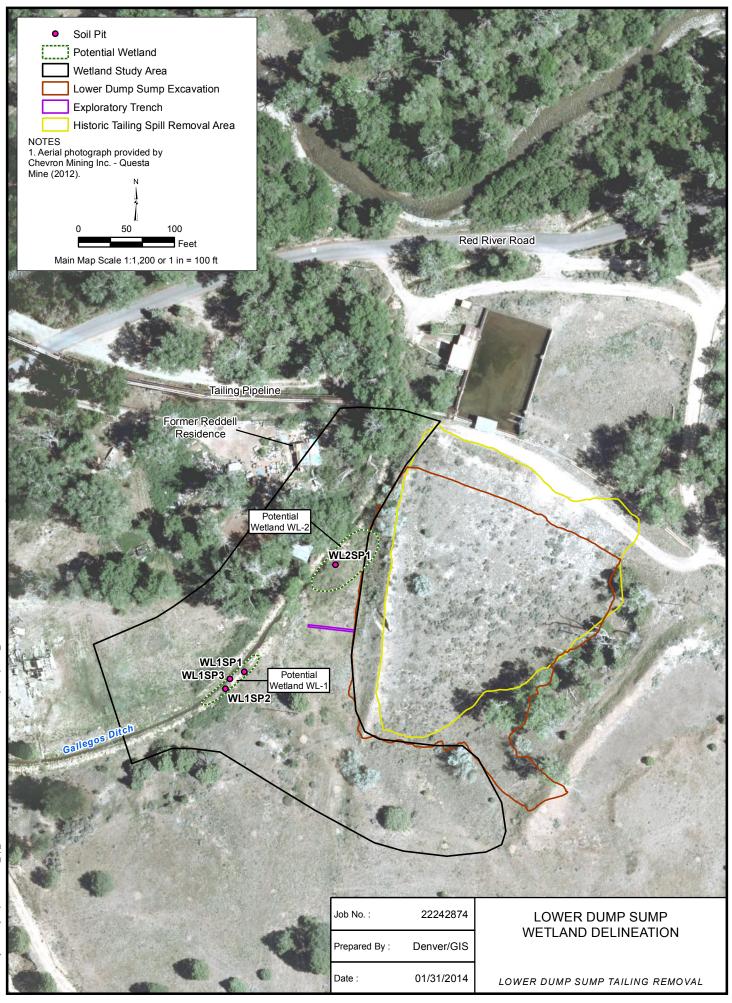
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov. Accessed January 15, 2013.

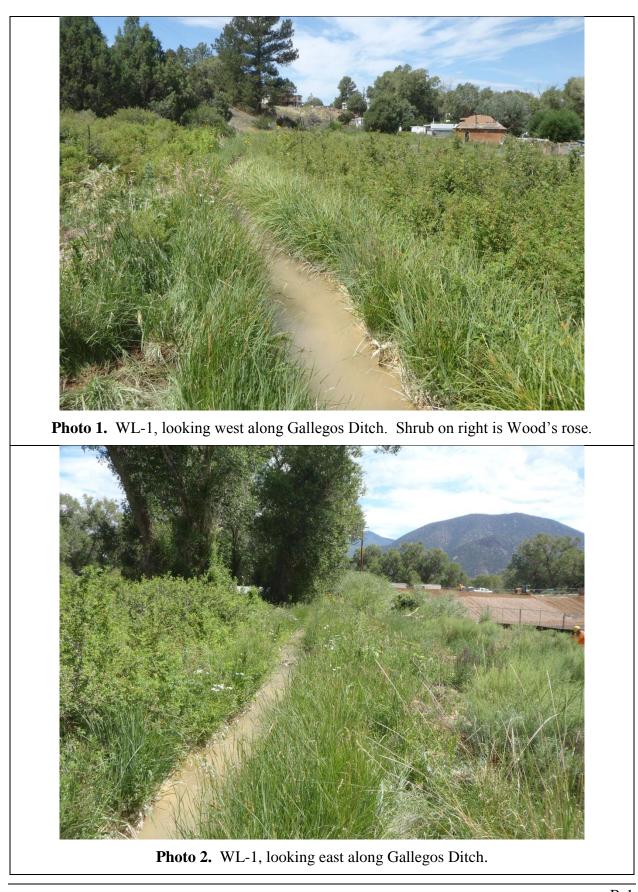
Lichvar, R.W. 2013. 2013 Wetland Ratings. Phytoneuron: In Press New Mexico 2013 State Wetland Plant List available from U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory. <u>http://wetland\_plants.us.ace.army.mil</u>.

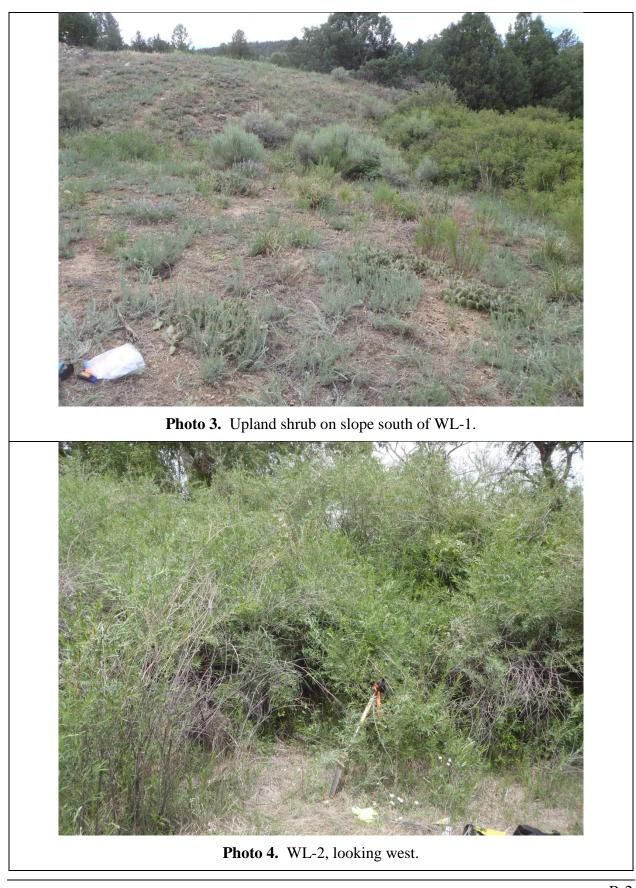
URS. 2012. Overall Site Plan for Removal Actions, Chevron Questa Mine Superfund Site, Rev. 1. Prepared for Chevron Mining Inc., Questa, New Mexico.

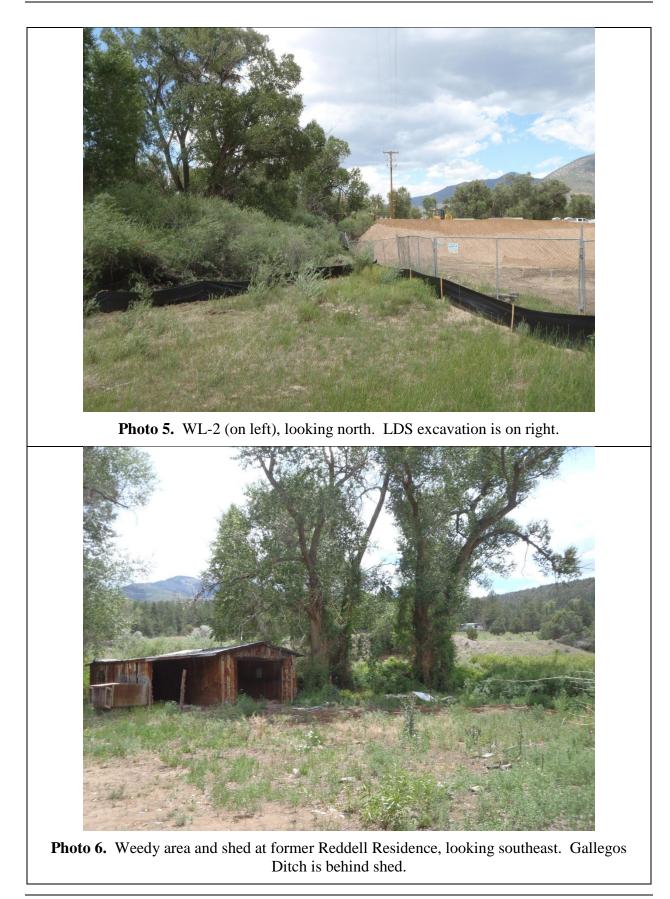
US Geological Survey (USGS). 1995. Questa, NM 1:24,000 topographic map.

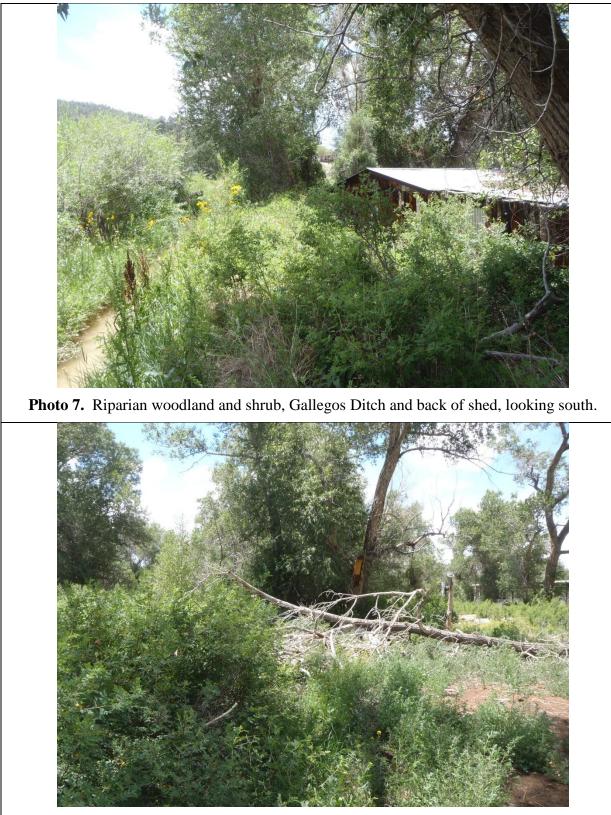
US Fish and Wildlife Service. 2010. National Wetlands Inventory, Wetlands Mapper. Data for Questa 1:24,000 quad. <u>http://www.fws.gov/wetlands/Data/Mapper.html</u>



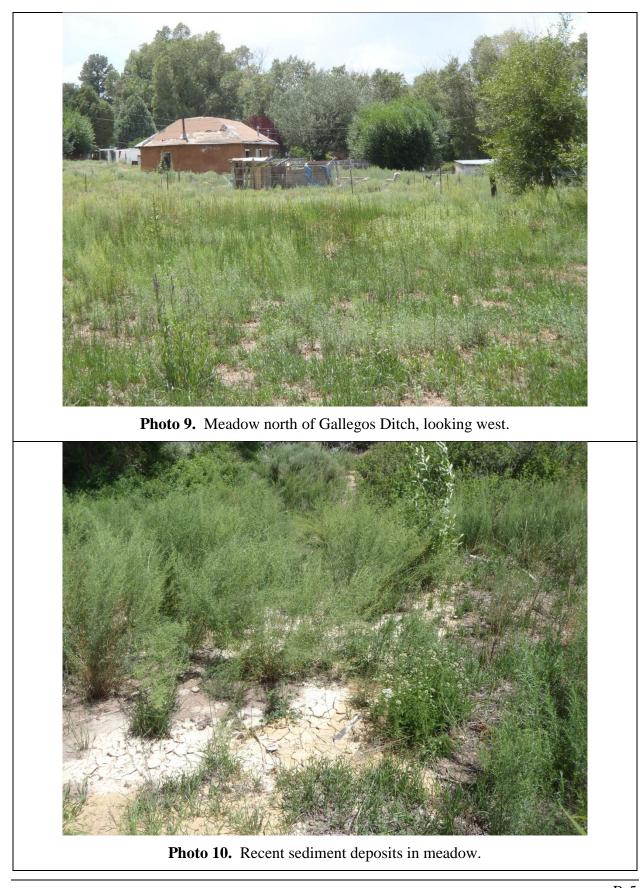


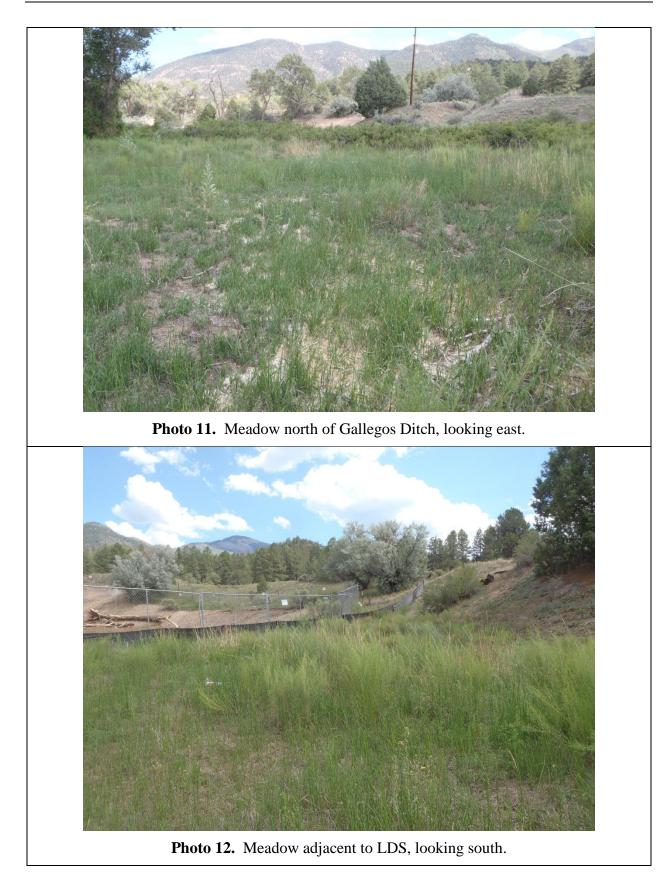






**Photo 8.** Riparian woodland east of former Reddell residence, looking northwest. Elevated tailing pipeline is in right background.





Irface Waters Features Data Sheet	
Project -	HTS Project
Date -	Wednesday, July 24, 2013
Investigators -	Jeff Dawson
Area ID -	Gallegos Ditch
Centerpoint coordinates -	
HUC -	13020101 (Upper Rio Grande)
Land Use -	Dispersed residential
Physical	
Type of feature (pond or stream)-	irrigation ditch
Source-	Red River
Connectivity -	unknown, appears to end in upland
Water Clarity (clear, murky, turbid)-	cloudy
Water Color (if obvious)-	whitish
For Streams Only	
Average Width of OHWM (bankfull)-	4 feet
Average observed width-	4 feet
Bankfull depth-	14 inches
Observed Depth-	8 inches
Bank Slope (X:X) (on each side if different - use N/S or E/W)-	vertical
Evidence of undercutting or excessive erosion-	No
Occurrance of riffle-pool-run complexes (Natural	NA
hydro only)-	ΝΑ
Channelized or meandering (Natural hydro only)-	
Bed substrate composition-	clayey silt
Velocity (slow, moderate, fast)-	slow
Flow Direction (to)-	west
or Ponds Only	
Inlet/Outlet present?	
Restricted outlet?	
Biological	400
Percent estimated bank cover-	100
Bank vegetation (dominant species/if associated with wetland refer to data sheet)-	sedges and grasses
Aquatic vegetation present (Y/N, list species if known)-	none
Percent overstory (amount hanging over the channel, streams only)-	10
Evidence of rafted/submerged large woody debris-	NA
Evidence of other rafting (smaller debris, etc.)-	NA
Aquatic or terrestrial wildlife present (list species)-	magpie, kestrel, house wren, violet-green swallow

### WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: HTS Project/Lower Dump Sump	areach eigene ears. D	City/Cour	nty:Questa,	Taos County	Sar	npling Date:	7/24/13	
Applicant/Owner: Chevron	949)		1	State:NM	Sar	npling Point:	WL-1	shally.
Investigator(s): Jeff Dawson, Eric Bunnell	2427-3	Section,	Township, Ra	ange:Section 6, T28	N, R131	ERELAN	W. Wi	-11
Landform (hilislope, terrace, etc.): terrace	Lydig -			convex, none):conv	III III VIII	12 2 21	ope (%):2	
Subregion (LRR):E - Rocky Mountain Forests and Ra	angeland Lat:36	.69401	(H	Long: -105.5292			um:NAD	1983
Soil Map Unit Name: Tenorio loam, 1-3% slop				and the second s	ssificatior	The state of the s	1	
Are climatic / hydrologic conditions on the site typi		aar? Ves	No (	11 00000				
				The The Territory William				~
		ly disturbed		"Normal Circumstand			No	S
Are Vegetation Soil or Hydrology	and the states of the	roblematic		eeded, explain any a				
SUMMARY OF FINDINGS - Attach sit	te map showing	g sampli	ng point l	ocations, transe	ects, im	portant fe	eatures,	etc.
Hydric Soil Present? Yes	No     No     No     No     No     No		the Sampled ithin a Wetla		с	No (e	n Fridansk Stop	
Remarks: Potential wetland along a portio west is at the base of a 4:1 slope River Valley. To the north is a r	e to the south. To	the east,	the ditch is	elevated above the				
VEGETATION - Use scientific names	of plants.	н ш <sup>. Ш</sup> . – 3.	The States	te estilität in te	3.6	righten Meria	and dette	
Tree Stratum Plot size:	Absolute % Cover	Dominar Species	nt Indicator ? Status	1848 B	1.512	1 11 1 1 1	A P WHEN	8 L S I
1.	<u>/// Cover</u>	Opecies	<u>· Otatus</u>	Dominance Test		Service Service		
2.	Texture:		-	That Are OBL, FA		AC	- AND	
3.				(excluding FAC-):			3	(A)
4	nin na main dana		YEAR JUDA	Total Number of D Species Across Al			3	(B)
	322	= Total Co	over	Percent of Domina				(2)
Sapling/Shrub Stratum Plot size:			The second second	That Are OBL, FA			0.0%	(A/B)
1.		<u> </u>		Prevalence Index	workshe	et:		14 
2. 3.				Total % Cove			bly by:	
4				OBL species	31	x 1 =	31	0.0100 0.011
5. Million and an and an and an and a second s	Tagetograde		NELLERANCE (	FACW species	4	x 2 =	8	
		= Total Co	ver	FAC species	69	x 3 =	207	
Herb Stratum Plot size10 x 2 m			1120.00	FACU species		x 4 =	0	
1. Carex aquatilis	6	No	OBL	UPL species		x 5 =	0	
2. Poa pratensis	30	Yes	FAC	Column Totals:	104	(A)	246	(B)
3. Geum macrophyllum	2	No	FAC	Prevalence I	ndex = B	/A =	2.37	
4 Epilobium ciliatum	4	No	FACW	Hydrophytic Veg				e ipan Antonio
5. Rumex crispus	4	No	FAC	1 - Rapid Tes			etation	
6. Agrostis stolonifera	5	No	FAC	× 2 - Dominanc	e Test is	>50%		
7 Bromus inermis 8 Carex nebrascensis	3	No	FAC	X 3 - Prevalence				
	25 25	Yes	OBL	4 - Morpholog		tations <sup>1</sup> (Prov on a separat		rting
9. <i>Phleum pratense</i> 10.	CHILDREN TRACTOR INC.	Yes	FAC	5 - Wetland N			e sneet)	
Woody Vine Stratum Plot size	104	= Total Co		Problematic H Indicators of hydrogen be present, unles	lydrophyti ric soil an	c Vegetatior d wetland h	ydrology r	
1. 2. 1		= Total Co		Hydrophytic	Yes (			

			-opin noou	2		COURSES.		n the absence of indicators.)	
Depth inches)	Mat Color (moist		Color	r (moist)	x Features %	<u>Type<sup>1</sup></u>	Loc <sup>2</sup>	Remarks	e allar
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Hax South	10YR2/1			- madified	Swillin -	Lenna V		silty clay loam	
ier milite	10YR7/4	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	S. Same			-Costan -		silty clay loam	
14-18	10YR4/3			-	-014		The second secon		in program
14-10								silty clay loam mixed matrix	dan 195 h
	7.5YR6/6	5		1961 N-1710#40472		<u>a Select</u> Junia S	143 8 80 - 1136 104	silty clay loam	inger As
	rer sine	a Tista ( 1996 v V	na na natana	[## ] <u>원</u> [[ 년 ]	<u> </u>	belline aut	an mane		10.14
ype: C=Cor	ncentration, D=Dep	pletion, RM=R	educed Matri	ix, CS=Cover	ed or Coate	d Sand Gra	ins	<sup>2</sup> Location: PL=Pore Lining,	M=Matrix
ydric Soil I	ndicators: (App	licable to all	LRRs, unle	ss otherwis	e noted.)		5 -24	Indicators for Problematic Hydric Soils	. Consection
Black Hi Hydroge Deplete	oipedon (A2) istic (A3) en Sulfide (A4) d Below Dark Su			Sandy Redo Stripped Ma Loamy Muc Loamy Gley Depleted M	atrix (S6) ky Mineral ved Matrix atrix (F3)	(F2)	ept MLR/	2 cm Muck (A10)     Red Parent Material (TF2)     Very Shallow Dark Surface (TF12)     Other (Explain in Remarks)	245 774 1 2799
Sandy N	ark Surface (A12 Aucky Mineral (S Gleyed Matrix (S	S1)		Redox Dark Depleted D Redox Dep	ark Surfac	e (F7)		<sup>3</sup> Indicators of hydrophytic vegetation wetland hydrology must be presenuless disturbed or problematic.	
Type: Depth (inc	o hydric indica	ators. Soils	s may be r	nodified b	y ditch m	aintenan	ce, altho	ugh spoil from most recent ditch clean	No (• ing is
Type: Depth (inc emarks: No de	ches): o hydric indica	ators. Soils le area of p	otential w	etland. Ye	ellowish	material a	appears t		ing is
Type: Depth (inc emarks: No de sin	thes): o hydric indica posited outsid milar. All soil	ators. Soils le area of p	otential w	etland. Ye	ellowish	material a	appears t	ugh spoil from most recent ditch clean	ing is
Type: Depth (inc emarks: No de sin <b>/DROLO</b> /etland Hype	ches): o hydric indica posited outsid milar. All soil GY drology Indicat	ators. Soils le area of p l pits within cors:	otential w n 2 to 3 fee	et of edge	ellowish	material a	appears t	ugh spoil from most recent ditch clean	ing is
Type: Depth (inc emarks: No de sin <b>/DROLO</b> Tetland Hyd imary Indica	ches): o hydric indica posited outsid milar. All soil GY drology Indicat tors (minimum of c	ators. Soils le area of p l pits within cors:	otential w n 2 to 3 fee	et of edge	ellowish i of open v	material a vater in d	appears t litch.	ugh spoil from most recent ditch clean o be lenses of fine sand. Soil pits 2 an Secondary Indicators (minimum of two r	ing is d 3 were equired)
Type: Depth (inc emarks: No de sin <b>'DROLO</b> <b>/etland Hyd</b> imary Indica ] Surface	ches): o hydric indica posited outsid milar. All soil GY drology Indicat	ators. Soils le area of p l pits within cors:	otential w n 2 to 3 fee	etland. Yo et of edge apply) Water-Sta	ellowish i of open v	material a vater in d	appears t litch.	ugh spoil from most recent ditch clean o be lenses of fine sand. Soil pits 2 an	ing is d 3 were equired)
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Type: Depth (inc emarks: No de sin <b>'DROLO</b> <b>'etland Hyd</b> imary Indica Surface High Wa Saturatio Water M	ches): o hydric indica posited outsid milar. All soil GY drology Indicat tors (minimum of c Water (A1) tter Table (A2) on (A3) larks (B1)	ators. Soils le area of p l pits within cors:	otential w n 2 to 3 fee	et of edge apply) Water-Sta MLRA 1, Salt Cruss Aquatic Ir	ellowish n of open v ined Leave 2, 4a, and t (B11) ivertebrate	material a vater in d es (B9) (e) 4b) es (B13)	appears t litch.	ugh spoil from most recent ditch clean         o be lenses of fine sand. Soil pits 2 an         Secondary Indicators (minimum of two r         Water-Stained Leaves (B9) (ex         MLRA 1, 2, 4a, and 4b)         Drainage Patterns (B10)         Dry-Season Water Table (C2)	ing is d 3 were equired) cept
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Type: Depth (inc emarks: No de sin //DROLO //etland Hyd imary Indica ] Surface ] High Wa ] Saturatio ] Water M ] Sedimer ] Drift Dep	ches): o hydric indica posited outsid milar. All soil GY drology Indicat tors (minimum of c Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	ators. Soils le area of p l pits within cors: one required; c	check all that	apply) Water-Sta MLRA 1, Salt Cruss Aquatic Ir Hydrogen Oxidized	ined Leave t (B11) ivertebrate a Sulfide O Rhizosphe	material a vater in d es (B9) (ex 4b) es (B13) dor (C1) res on Liv	appears t litch. ccept	ugh spoil from most recent ditch clean         o be lenses of fine sand. Soil pits 2 an         Secondary Indicators (minimum of two r         Water-Stained Leaves (B9) (ex         MLRA 1, 2, 4a, and 4b)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Ima         (C3)	ing is d 3 were equired) ccept
Type: Depth (inc emarks: No de sin <b>'DROLO</b> <b>'etland Hyd</b> imary Indica ] Surface ] High Wa ] Saturatio ] Saturatio ] Saturatio ] Sedimer ] Drift Dep ] Algai Ma	ches): o hydric indica posited outsid milar. All soil GY drology Indicat tors (minimum of c Water (A1) tter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ators. Soils le area of p l pits within cors: pone required; c	check all that	et of edge et of edge apply) Water-Sta MLRA 1, Salt Crusi Aquatic Ir Hydrogen Oxidized Presence	ined Leave 2, 4a, and t (B11) vertebrate a Sulfide O Rhizosphe of Reduce	material a vater in d es (B9) (ex 4b) es (B13) dor (C1) eres on Liv ed Iron (C4	appears t litch. ccept	ugh spoil from most recent ditch clean         o be lenses of fine sand. Soil pits 2 an	ing is d 3 were equired) ccept
Type: Depth (inc emarks: No de sin <b>'DROLO</b> <b>'etland Hyd</b> imary Indica ] Surface ] High Wa ] Saturatio ] Water M ] Sedimer ] Drift Dep ] Algai Ma ] iron Dep	ches): o hydric indica posited outsid milar. All soil GY drology Indicat tors (minimum of c Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ators. Soils le area of p l pits within cors: one required; c	check all that	apply) Water-Sta MLRA 1, Salt Cruss Aquatic Ir Oxidized Presence Recent Irc	ined Leave 2, 4a, and t (B11) nvertebrate Sulfide Or Rhizosphe of Reduce	material a vater in d es (B9) (ex 4b) es (B13) dor (C1) res on Liv ed Iron (C4 ons in Tille	appears t litch. ccept ing Roots 4) ed Soils (C	ugh spoil from most recent ditch clean         o be lenses of fine sand. Soil pits 2 an	ing is d 3 were equired) cept
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Type: Depth (inc emarks: No de sin <b>'DROLO</b> <b>'etland Hyu</b> imary Indica Surface High Wa Saturatio Water M Sedimer Drift Dep Algai Ma Iron Dep Surface Inundatio	ches): o hydric indica eposited outsid milar. All soil <b>GY</b> drology Indicat tors (minimum of c Water (A1) tter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Ae	ators. Soils le area of p l pits within cors: one required; c	check all that	et of edge et of edge water-Sta MLRA 1, Salt Cruss Aquatic Ir Hydrogen Oxidized Presence Recent Irc Stunted o	ined Leave 2, 4a, and t (B11) nvertebrate Sulfide Or Rhizosphe of Reduce	material a vater in d es (B9) (ex 4b) es (B13) dor (C1) res on Liv ed Iron (C4 ons in Tille Plants (D	appears t litch. ccept ing Roots 4) ed Soils (C	ugh spoil from most recent ditch clean         o be lenses of fine sand. Soil pits 2 an	ing is d 3 were equired) cept agery (CS
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Type: Depth (inc emarks: No de sin /DROLO /etland Hyd rimary Indica Surface High Wa Saturatio Saturatio Sedimer Drift Dep Algai Ma Iron Dep Surface Surface Sparsely leld Obser	ches): o hydric indica posited outsid milar. All soil GY drology Indicat tors (minimum of c Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Ae vegetated Con vations: er Present?	ators. Soils le area of p l pits within cors: one required; c one required; c	check all that check all that (B7) (B7) (B8)	apply) Water-Sta MLRA 1, Salt Crusi Aquatic Ir Hydrogen Oxidized Presence Recent Irc Stunted o Other (Ex	ined Leave 2, 4a, and t (B11) avertebrate of Reduce on Reducti r Stressed plain in Re	material a vater in d es (B9) (ex 4b) es (B13) dor (C1) res on Liv ed Iron (C4 ons in Tille Plants (D	ing Roots (cept 4) ed Soils (( 1) (LRR A	ugh spoil from most recent ditch clean         o be lenses of fine sand. Soil pits 2 an         Secondary Indicators (minimum of two r         Water-Stained Leaves (B9) (ex         MLRA 1, 2, 4a, and 4b)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Ima         (C3)       Geomorphic Position (D2)         Shallow Aquitard (D3)         26)       FAC-Neutral Test (D5)         a)       Raised Ant Mounds (D6) (LRR	ing is d 3 were equired) cept agery (CS

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: HTS Project/Lower Dump Sump		City/Cou	unty:Questa,	Taos County	Sar	npling Date:	7/24/13	
Applicant/Owner: Chevron	<sup>1=2</sup> +	19131		State:NM	Sar	npling Point:	WL-2	inne.
Investigator(s): Jeff Dawson, Eric Bunnell		Section	, Township, Ra	ange: Section 6, T28		E Margar		
Landform (hillslope, terrace, etc.): terrace		Local re	elief (concave,	convex, none):conv	ex	SI	ope (%):2	
Subregion (LRR): E - Rocky Mountain Forests and Rangel	and Lat:36.	.69432		Long: -105.5949			um:NAD	
Soil Map Unit Name: Tenorio loam, 1-3% slope				NWI cla	ssification	NA		
Are climatic / hydrologic conditions on the site typical fe	or this time of y	ear? Yes	No (	(If no, explain	n in Rema	rks.)		
Are Vegetation Soil or Hydrology	significantly			"Normal Circumstand			No	$\mathbf{C}$
Are Vegetation Soil or Hydrology	naturally p			eeded, explain any a	and the state			
	Service in the							19 N
SUMMARY OF FINDINGS - Attach site m	ap snowing	g samp	ling point i	ocations, transe	ects, im	portant re	eatures,	etc.
Hydrophytic Vegetation Present?     Yes       Hydric Soil Present?     Yes       Wetland Hydrology Present?     Yes	No ( No ( No (		s the Sample within a Wetla		С	No 🖲		
Remarks:	films inglasses	相談的	e valé vynitas.	organie i la constanti de la const	· · ·	1/1201* 1.1.5751/1	1187 S 1	10
international and the second second second second								
			Dentrike Den	1982	1		a nazi	# 11 f
VEGETATION - Use scientific names of p	Absolute	Domina	ant Indicator	and the second sec	118		(1) <sup>(1)</sup> (1)	
Tree Stratum Plot size:			s? <u>Status</u>	Dominance Test	workshee	ət:		
1				Number of Domina				
2		1.20		That Are OBL, FA	CVV, or FA		3	(A)
3				Total Number of D	ominant			
4	- 17 M 19-51			Species Across Al	I Strata:		4	(B)
Sapling/Shrub Stratum Plot size: 10 x 5 m		= Total C	Cover	Percent of Domina That Are OBL, FA			5.0 %	(A (D)
1. Salix exigua	100	Yes	FACW				5.0 %	(A/B)
2. Clematis ligustififolia	25	Yes	FAC	Prevalence Index			00313133	
3.				Total % Cover	<u>r of:</u>		oly by:	GGHOR E C
4.		0)		OBL species FACW species	100	x 1 = x 2 =	0 200	
5.			an tun haata	FAC species	33	x 3 =	200 99	
Herb Stratum Plot size 10 x 5 m	125	= Total C	Cover	FACU species	6	x 4 =	24	
1. Cynoglossum officinale	6	Yes	FACU	UPL species		x 5 =	0	
2. Poa pratensis	6	Yes	FAC	Column Totals:	139	(A)	323	(B)
3. Cirsium arvense	2	No	FAC	Prevalence I		10 - 11 - 12	0.00	
4.			an des falsellen	Hydrophytic Veg		1.	2.32	
5.			201-00	1 - Rapid Tes			etation	
		NO TENS	2011年1月	× 2 - Dominanc				
7. 8.				X 3 - Prevalence				
9.			100.000 0.000	4 - Morpholog		tations <sup>1</sup> (Prov on a separat		orting
10.	All and a second second			5 - Wetland N			o oneey	
Woody Vine Stratum Plot size:	14	= Total C	Cover	Problematic H Indicators of hydrogenetics Indicators of hydrogenetics Present, unles	ric soil an	d wetland h	ydrology r	
1		= Total C	Over	Hydrophytic	Yes (•	2		

Depth	Matr			2012 AUG 11213	ox Features			Pittina	e of indicators.)	
(inches)	Color (moist)		Colo	or (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Rem	arks
0-14	10YR4/4	100		it parties	den sin a	Age 18		Loam	slightly moist, cru	mb structur
	<u> 4008</u>		o: Thur Set	1990 <sup>14</sup> -> 41	o Vac i en car				anna dhaasaani a	teo STel trest p
		To go	10	1993) - X		ti si	<u>e 6</u> .	695-190) 265-	And an assettle second	
				PBox				in wide		6-191
	<u>, z Kies</u> z	Su		ระ เมื่อมาเรื่		11 F				
				100000000	and and a second se			and the second		
ype: C=Co	ncentration, D=Dep	letion, RM=Re	educed Mat	rix, CS=Cover	red or Coated	I Sand Gra	ins		<sup>2</sup> Location: PL=Pore Lir	ning, M=Matrix
-	Indicators: (Appl	icable to all I	LRRs, uni	ess otherwis	se noted.)			Indicators	for Problematic Hydric Se	olls <sup>3</sup> :
Histoso	• •			Sandy Redo					Muck (A10)	A. In
	pipedon (A2)			Stripped Ma			an volte		Parent Material (TF2)	
=	listic (A3)			Loamy Muc			ept MLRA	,,	Shallow Dark Surface (Th	=12)
	en Sulfide (A4)	face (A.1.1)		Loamy Gle	and the second se	F2)		Othe	(Explain in Remarks)	
<u> </u>	ed Below Dark Su Dark Surface (A12	. ,		Depleted M	k Surface (F3)	-6)				
-	Mucky Mineral (S		H		ark Surface (r			<sup>3</sup> Indic	ators of hydrophytic vege	tation and
	Gleved Matrix (S4			· · · ·	ressions (F		E Radat		and hydrology must be prosent to a second seco	
Type: Depth (in marks: N	ches): Io hydric indica	tors	933 1937 1937 1937 1937	1979 - 2 797 - 2 99 - 2 99 -				Hydric Soi	I Present? Yes (	No 🖲
Depth (in		tors			lear?			Hydric Sol	I Present? Yes (	No (e
Depth (in emarks: N	lo hydric indica DGY							Hydric Sol	I Present? Yes (	No (e
Depth (indexes) emarks: N DROLO etland Hy	lo hydric indica	ors:	heck all that	t apply)				- (P	dary Indicators (minimum of f	
Depth (in marks: N DROLO etland Hy imary Indica	OGY Indrology Indicato ators (minimum of o Water (A1)	ors:	heck all tha	Water-Sta	ined Leave			Secon	dary Indicators (minimum of f later-Stained Leaves (B9)	two required)
Depth (in emarks: N DROLO etland Hy imary Indice ] Surface ] High Wa	OGY drology Indicato ators (minimum of ou Water (A1) ater Table (A2)	ors:	heck all tha	Water-Sta	2, 4a, and			Secon	dary Indicators (minimum of f /ater-Stained Leaves (B9) fiLRA 1, 2, 4a, and 4b)	two required)
Depth (in marks: N DROLO etland Hy imary Indice Surface High Wa Saturati	OGY do hydric indica OGY drology Indicato ators (minimum of o Water (A1) ater Table (A2) ion (A3)	ors:	heck all tha	Water-Sta MLRA 1, Salt Crus	<b>2, 4a, and</b> t (B11)	4b)		Secon	dary Indicators (minimum of f /ater-Stained Leaves (B9) <b>ILRA 1, 2, 4a, and 4b</b> ) rainage Patterns (B10)	two required) (except
Depth (inverse Normarks: N	OGY vorology Indicate ators (minimum of our Water (A1) ater Table (A2) ion (A3) Marks (B1)	ors:	heck all tha	Water-Sta MLRA 1, Salt Crus Aquatic II	<b>2, 4a, and</b> t (B11) nvertebrates	<b>4b</b> ) s (B13)			dary Indicators (minimum of f /ater-Stained Leaves (B9) <b>/ILRA 1, 2, 4a, and 4b</b> ) rainage Patterns (B10) ry-Season Water Table (0	two required) (except
Depth (in marks: N DROLO etland Hy imary Indica ] Surface ] High Wa ] Saturati ] Water M ] Sedime	OGY drology Indicato ators (minimum of our Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2)	ors:	heck all tha	Water-Sta MLRA 1, Salt Crus Aquatic II Hydroger	<b>2, 4a, and</b> t (B11) nvertebrates n Sulfide Od	4b) s (B13) lor (C1)	xcept	Secon	dary Indicators (minimum of f later-Stained Leaves (B9) <b>ILRA 1, 2, 4a, and 4b</b> ) rainage Patterns (B10) ry-Season Water Table (C aturation Visible on Aerial	two required) (except
Depth (investment of the second secon	OGY drology Indicato ators (minimum of or Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3)	ors:	heck all tha	Water-Sta MLRA 1, Salt Crus Aquatic II Hydroger Oxidized	<b>2, 4a, and</b> t (B11) nvertebrates n Sulfide Od Rhizospher	4b) s (B13) lor (C1) res on Liv	xcept	Secon 	dary Indicators (minimum of f /ater-Stained Leaves (B9) /ILRA 1, 2, 4a, and 4b) rainage Patterns (B10) ry-Season Water Table (C aturation Visible on Aerial eomorphic Position (D2)	two required) (except
Depth (investment of the second secon	OGY drology Indicato ators (minimum of or Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ors: ne required; cl		Water-Sta MLRA 1, Salt Crus Aquatic II Hydroger Oxidized Presence	2, 4a, and t (B11) nvertebrates n Sulfide Od Rhizospher e of Reduce	<b>4b)</b> s (B13) lor (C1) res on Liv d Iron (C4	xcept ving Roots ( 4)	Secon Secon D D C S C S S S S S S S S S S S S S	dary Indicators (minimum of f /ater-Stained Leaves (B9) <b>/ILRA 1, 2, 4a, and 4b</b> ) rainage Patterns (B10) ry-Season Water Table (( aturation Visible on Aerial ecomorphic Position (D2) hallow Aquitard (D3)	two required) (except
Depth (investment of the second secon	OGY drology Indicato ators (minimum of or Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ors: ne required; cl		Water-Sta MLRA 1, Salt Crus Aquatic In Hydroger Oxidized Presence Recent In	2, 4a, and t (B11) nvertebrates n Sulfide Od Rhizospher e of Reduce on Reductio	4b) s (B13) lor (C1) res on Liv d Iron (C4 ons in Tille	xcept ving Roots ( 4) ed Soils (Cd	Secon Secon D D C3) G 6) S S S S S S S S S S S S S	dary Indicators (minimum of /ater-Stained Leaves (B9) <b>/ILRA 1, 2, 4a, and 4b</b> ) rainage Patterns (B10) ry-Season Water Table (C aturation Visible on Aerial ecomorphic Position (D2) hallow Aquitard (D3) FAC-Neutral Test (D5)	wo required) (except C2) Imagery (C9
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APPENDIX E

CHEVRON QUESTA MINE TAILINGS PIPELINE REMOVAL PROJECT CULTURAL RESOURCES SURVEY



# **1.0 CULTURAL RESOURCES SURVEY SUMMARY**

At the request of Chevron Environmental Management Company (CEMC), Arcadis surveyed ditches and other cultural resources along the Tailings Pipeline removal corridor in December 2017 and in April and May 2018. The survey results were submitted to the New Mexico Historic Preservation Office (SHPO) under New Mexico Cultural Resource Information System (NMCRIS) numbers 139651 and 140384 (ARCADIS 2018a and 2018b). The cultural resources were surveyed in or near the pipeline removal stages shown in Attachment A. A finding of No Adverse Effect on Historic Properties was documented by Arcadis in both surveys.

This document summarizes the cultural survey results as they pertain to the Chevron Questa Mine Tailings Pipeline Removal Project. Excerpts from the Arcadis cultural surveys are attached to this summary, including the report cover letters, NMCRIS Investigation Abstract Forms (NIAF), and select report figures. The following historic structures were found and evaluated for eligibility in the National Register of Historic Places (NRHP) during the cultural surveys.

<u>NMCRIS No.: 139651 (see attached Cover Letter, NIAF, and FIG-4)</u> South Ditch (aka: Questa Citizens South Ditch, South Side Ditch, HCPI 44457/LA83968) Thunder Bridge (aka: Second River Crossing, HCPI 44458/CQTP-01)

NMCRIS 140384 (see attached Cover Letter, NIAF, FIG-2, and FIG-3) Elevated Trestle (aka: HCPI 44844) Lower Dump Sump (aka: HCPI 44845) North Ditch (aka: Embargo Ditch, Embargo Acequia, HCPI 44846) Acequia Del Molina (aka: Molina Ditch, HCPI 44847) Middle Ditch (aka: HCPI 44848)

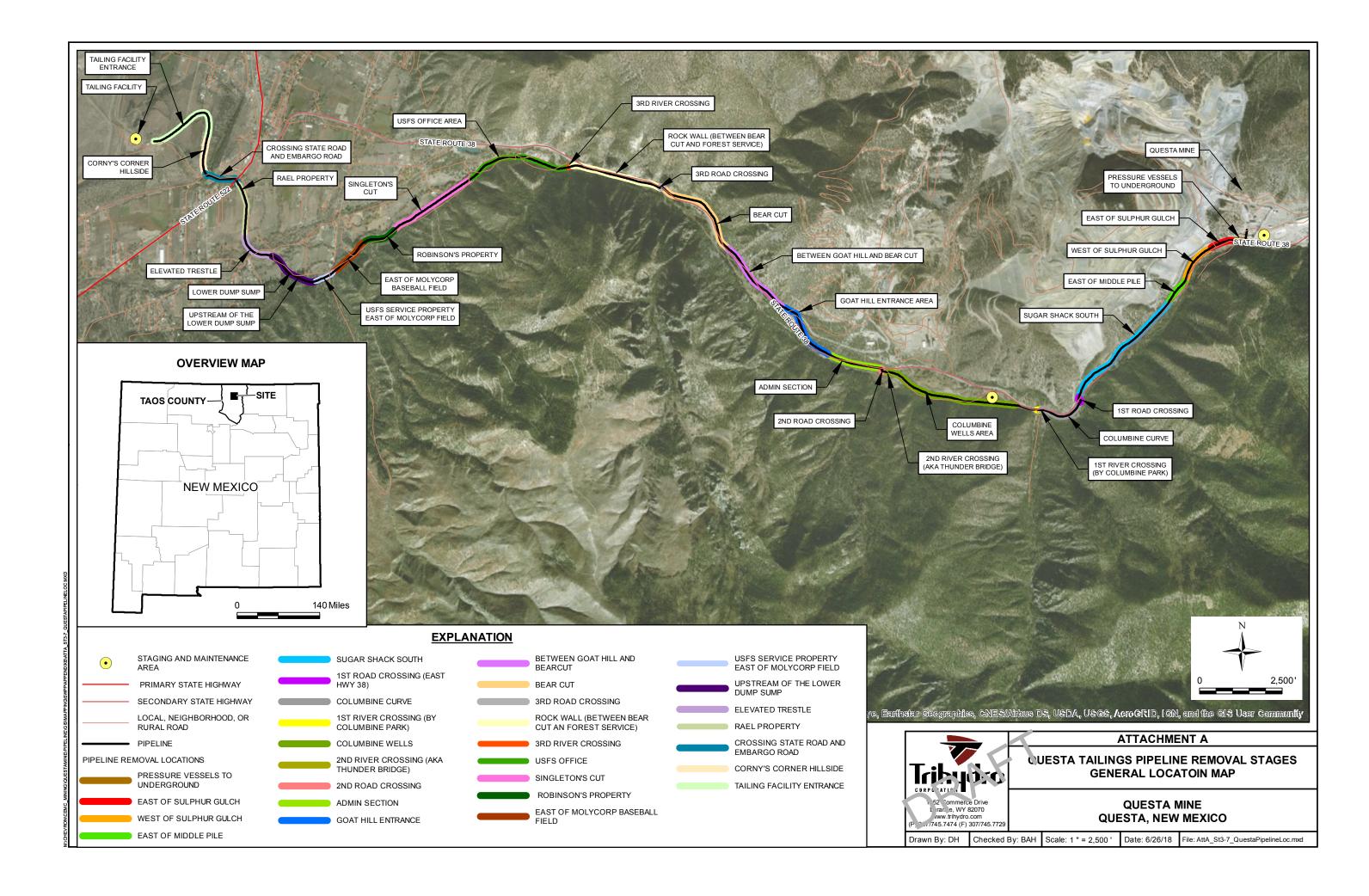
Two of the historic structures found during the cultural surveys are considered eligible for inclusion in the NRHP. The two eligible structures are the South Ditch and the North Ditch (Embargo Ditch). All other historic structures found during the surveys are recommended at not eligible for inclusion in the NRHP as they fail to meet any of the Eligibility Criteria.

The South Ditch has been previously documented and evaluated as eligible for inclusion in the National Register of Historic Places. The extent of the South Ditch on Chevron property was documented in December 2017 and the effects of the project upon it evaluated (ARCADIS 2018a). Only non-significant portions of the ditch were potentially to be impacted by the Tailings Pipeline Removal project. A finding of No Adverse Effect on a Historic Property received concurrence from the New Mexico SHPO. The Forest Service did not indicate any adverse effects to the portion of the South Ditch on their property in their report to you.

The North Ditch (Embargo Ditch) was evaluated by Arcadis in May 2018 and has not been formally documented or evaluated for NRHP eligibility by the New Mexico SHPO. The North Ditch is primarily located on private lands with short portions located on NM Department of Highways lands were it crosses NM State Highway 38 and NM State Highway 522 in Questa. A portion of the North Ditch is in the Tailings Pipeline Removal project Area of Potential Effect (APE) where it parallels Lower Embargo Road and crosses underneath State Highway 522. The North Ditch is recommended as eligible for the NRHP. The Chevron former tailing pipeline will be abandoned in place where it crosses the North Ditch. Therefore, the project will have No Adverse Effect on Historic Properties.

# 2.0 REFERENCES

- ARCADIS. 2018a. Chevron Questa Mine Tailings Pipeline Removal Project, Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 139651). January 12, 2018.
- ARCADIS. 2018b. Chevron Questa Mine Tailings Pipeline Removal Project, Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 140384). May 29, 2018.





Mr. Clinton Chisler Mining Act Reclamation Program Mining and Minerals Division Energy, Minerals, and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505

Subject:

Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 139651)

#### Dear Mr. Chisler:

Enclosed please find our cultural resources inventory report for the Chevron Mining, Inc. (CMI) Questa Tailings Pipeline Removal Project in Taos County, New Mexico. The enclosed report covers four segments of Stage 2 that are located on CMI property (Above Lower Dump Sump, East of Molycorp Baseball Field, Singleton's Cut and Columbine Wells Area) and one segment on private property (Robinson's Property). One previously recorded historic ditch (Questa Citizens South Ditch/HCPI 44457/LA83968) is located within the Area of Effect (APE) of the project crossing through the Above Lower Dump Sump, East of Molycorp Baseball Field, Robinson Property, and Singleton's Cut segments. The Ditch has been determined to be eligible for the National Register of Historic Places (NRHP) by the New Mexico Historic Preservation Office (SHPO). Only non-contributing portions of the Ditch are located within the project APE and no further work is recommended. One newly recorded historic structure is located within the APE of the project segments. The Thunder Bridge (HCPI 44458) is located in Red River Canyon at the west end of the Columbine Wells Area segment. This structure has been evaluated as not eligible for inclusion in the NRHP as it meets none of the NRHP eligibility criteria. No further work is recommended. Nine historic isolated finds (IF #s 1-9) were also documented during this investigation, all of which are recommended as not eligible for the NRHP. The proposed project will therefore have No Adverse Effect on Historic Properties.

The report has been filed electronically with the New Mexico SHPO through the New Mexico Cultural Resources Information System (NMCRIS). A hard copy of this report has also been forwarded to Bob Estes, Staff Archaeologist at the New Mexico Historic Preservation Division, for concurrence with the recommendations of eligibility and effect. The SHPO will have up to 30 days to comment and/or

**Environmental Business Consulting** 

<sub>Date:</sub> January 12, 2018

Contact: Dulaney Barclay

Phone: 720-344-3830

Email: dulaney.barclay@arcadis.co m

Our ref: B0046795.0075 Mr. Clinton Chisler January 12, 2018

concur with these findings. Please feel free to contact me if you have any questions or concerns.

Sincerely,

1

Dulaney Barclay Senior Archaeologist

Arcadis U.S., Inc.

Copies:

Bob Estes, New Mexico Historic Preservation Division, Santa Fe, NM

### NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

4. Title of Report:       5. Type of Report         Chevron Questa Tailings Pipeline Cultural Resources Inventory Stage 2 Sections B Thru D       Negative         Author(s)       Positive         Dulaney Barclay       6. Investigation Type         Research Design       YArchaeological Survey/Inventory Architectural Survey/Inventory Test Excavation Excavation         Collections/Non-Field Study       Compliance Decision Based on Previous Inventory Overview/Lit Review Monitoring         Ethnographic Study       Site/Property Specific Visit         Historic Structures Report       Other         7. Description of Undertaking (what does the project entail?):         Project involves the removal of a slury pipeline that extends between the Questa Mine and the Tailings Facility. The current investigation focused on inventory of the portion of the pipeline on Chevron property and one private parcel	1. NMCRIS Activity No.: 139651	2a. Lead Agency: NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals Division	2b. Other Agency(ies):	3. Lead	Agency Report No.:
Chevron Questa Tailings Pipeline Cultural Resources Inventory Stage 2 Sections B Thru D Negative Author(s) Dulaney Barclay 6. Investigation Type Collections/Non-Field Study Compliance Decision Based on Previous Inventory Overview/Lit Review Monitoring Ethnographic Study Stile/Property Specific Visit Historic Structures Report Other 7. Description of Undertaking (what does the project entail?): Project involves the removal of a slurry pipeline that extends between the Questa Mine and the Tailings Facility. The current investigation focused on inventory of the portion of the pipeline on Chevron property and one private parcel [] Continuati 8. Dates of Investigation: from: 12-Dec-2017 to: 13-Dec-2017 9. Report Date: 12-Jan-2018 10. Performing Agency/Consultant: ARCADIS Principal Investigator: Dulaney Barclay Field Personnel Names:			1		5 Type of Report
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Author(s)       Dulaney Barclay         6. Investigation Type			intoiniony orago 2 occubilo D Thi		Negative ,
Dulaney Barclay         6. Investigation Type            Research Design ②Archaeological Survey/Inventory △Architectural Survey/Inventory △Test Excavation △Excavation             Collections/Non-Field Study △Compliance Decision Based on Previous Inventory △Overview/Lit Review △Monitoring             Ethnographic Study △Site/Property Specific Visit △Historic Structures Report △Other            7. Description of Undertaking (what does the project entail?):            Project involves the removal of a slury pipeline that extends between the Questa Mine and the Tailings Facility. The current investigation focused on inventory of the portion of the pipeline on Chevron property and one private parcel             [ ] Continuation             8. Dates of Investigation: from: 12-Dec-2017 to: 13-Dec-2017 9. Report Date: 12-Jan-2018             10. Performing Agency/Consultant: ARCADIS             Principal Investigator: Dulaney Barclay             Field Supervisor: Dulaney Barclay             Field Personnel Names:					✓ Positive
6. Investigation Type         Research Design Archaeological Survey/Inventory Architectural Survey/Inventory Test Excavation Excavation         Collections/Non-Field Study       Compliance Decision Based on Previous Inventory       Overview/Lit Review       Monitoring         Ethnographic Study       Site/Property Specific Visit       Historic Structures Report       Other         7. Description of Undertaking (what does the project entall?):       Project involves the removal of a slurry pipeline that extends between the Questa Mine and the Tailings Facility. The current investigation focused on inventory of the portion of the pipeline on Chevron property and one private parcel         8. Dates of Investigation:       from: 12-Dec-2017       to: 13-Dec-2017       9. Report Date:       12-Jan-2018         10. Performing Agency/Consultant:       ARCADIS       .       .       .         Principal Investigator:       Dulaney Barclay       .       .         Field Personnel Names:       Field Personnel Names:       .	Author(s)				
Research Design       Archaeological Survey/Inventory       Architectural Survey/Inventory       Test Excavation       Excavation         Collections/Non-Field Study       Compliance Decision Based on Previous Inventory       Overview/Lit Review       Monitoring         Ethnographic Study       Site/Property Specific Visit       Historic Structures Report       Other         7. Description of Undertaking (what does the project entail?):       Project involves the removal of a slury pipeline that extends between the Questa Mine and the Tailings Facility. The current investigation focused on inventory of the portion of the pipeline on Chevron property and one private parcel         8. Dates of Investigation:       from: 12-Dec-2017       to: 13-Dec-2017       9. Report Date:       12-Jan-2018         10. Performing Agency/Consultant:       ARCADIS         Principal Investigator:       Dulaney Barclay         Field Personnel Names:	Dulaney Barclay				
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8. Dates of Investigation:       from: 12-Dec-2017       to: 13-Dec-2017       9. Report Date:       12-Jan-2018         10. Performing Agency/Consultant:       ARCADIS       .         Principal Investigator:       Dulaney Barclay         Field Supervisor:       Dulaney Barclay         Field Personnel Names:					2
10. Performing Agency/Consultant: ARCADIS Principal Investigator: Dulaney Barclay Field Supervisor: Dulaney Barclay Field Personnel Names:					[ ] Continuation
Principal Investigator: Dulaney Barclay Field Supervisor: Dulaney Barclay Field Personnel Names:	8. Dates of Investig	ation: from: 12-Dec-2017 to	o: 13-Dec-2017 9. Repor	t Date: 12-Jan-	2018
Field Supervisor: Dulaney Barclay Field Personnel Names:	10. Performing Age	ency/Consultant: ARCADIS	······································	÷.	
Field Personnel Names:	Principal Investiga	ator: Dulaney Barclay			
	Field Supervisor:	Dulaney Barclay			
Historian / Other:	Field Personnel N	ames:			
	Historian / Other:				

12. Applicable Cultural Resource Permit No(s):

13. Client/Customer (project proponent):

NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals D

Co	n	12	~	۰
00		LCI	c	•••

Address:

Phone:

14. Client/Customer Project No.:

### 15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)		Acres Surveyed	Acres in APE
Private Corporation (see records for company name)	1 - Contactor - Co	24.80	24.80
	TOTALS	24.80	24.80

### 16. Records Search(es):

Date(s) of HPD/ARMS File Review: November 30, 2017		Reviewer(s): ey Barclay	
Date(s) of Other Agency File Review	Agency:		
17. Survey Data: a. Source Graphics [ ] NAD 27	• •	Note: NAD 83 is the	NMCRIS standard.
✓ USGS 7.5' (1:24,000) topo ma ✓ GPS Unit Accuracy □<1.0 Other Source Graphic(s):			Aerial Photo(s)
b. USGS 7.5' Topographic Map N	lame		USGS Quad Code
Questa, NM		**************************************	36105-F5
c. County(ies): TAOS			
d. Nearest City or Town: Questa	, NM		
Township (N/S)	Range (E/W)	Section	
29N	12E	36	
29N	13E	31	
28N	13E	6	tin takan seri ne na sang nangan sebuta kana na si s
28N	13E	5	
Projected legal description?	[]Yes [	X]No [	] Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

18. Survey Field M	ethods:						
Intensity:	✓ 100% coverage	<100%	% coverage				
Configuration:	block survey units	✓ linear survey units (I x w):					
other survey un	its (specify):						
Scope: v non-se	lective (all sites/prope	rties recorded	d) selective/tl	hematic (selected	sites/properties	recorded)	
Coverage Method:	systematic pedes	trian coverag	e			oursenen ) soleen ate for	
other method (d	escribe):						
Survey Interval (m)	15 Crew Siz	ze: 1	Fieldwork Dates	; from: 12-Dec-2	2017 to:	13-Dec-2017 ,	
Survey Person Hou	irs: 8.00	Recording	g Person Hours:	4.00	Total Hours:	12.00	
Additional Narrative	e:						

[ ] Continuation

#### 19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Elevations vary from approximately 7400 to 7600 feet AMSL. Vegetation consists of an overstory of pine and juniper trees with understory of low shrubs, mixed forbs, cactus, and grasses. Soils consist of gravelly sandy loams derived from alluvium and colluvium. Project area is located in the Red River Canyon and on the gentle slopes at the base of the Taos Mountains, an extension of the Sangre DeCristo Range.

[ ] Continuation

20.a. Percent Ground Visibility:	b. Condition of Survey Area (grazed, bladed, undistributed, etc.):
Ranges from 100 % on bladed road to 50% on slopes above pipeline; averages	Survey corridor was primarily along a bladed access road that runs parallel to the pipeline on norths side. Eroded along steep slopes
70-80%.	on south side of pipeline. Pipeline parallels transmission line in places.

[ ] Continuation

21. CULTURAL RESOURCE FINDINGS

Yes, see next report section

No, discuss why:

[ ] Continuation

22. Attachments (check all appropriate boxes):

- [X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)
- [ X] Copy of NMCRIS Map Check (required)
- [ ] LA Site Forms new sites (with sketch map & topographic map) if applicable
- [ ] LA Site Forms (update) previously recorded & un-relocated sites (first 2 pages minimum)
- [ X] Historic Cultural Property Inventory Forms, if applicable
- [ ] List and Description of Isolates, if applicable

[ X] Photographs and Log

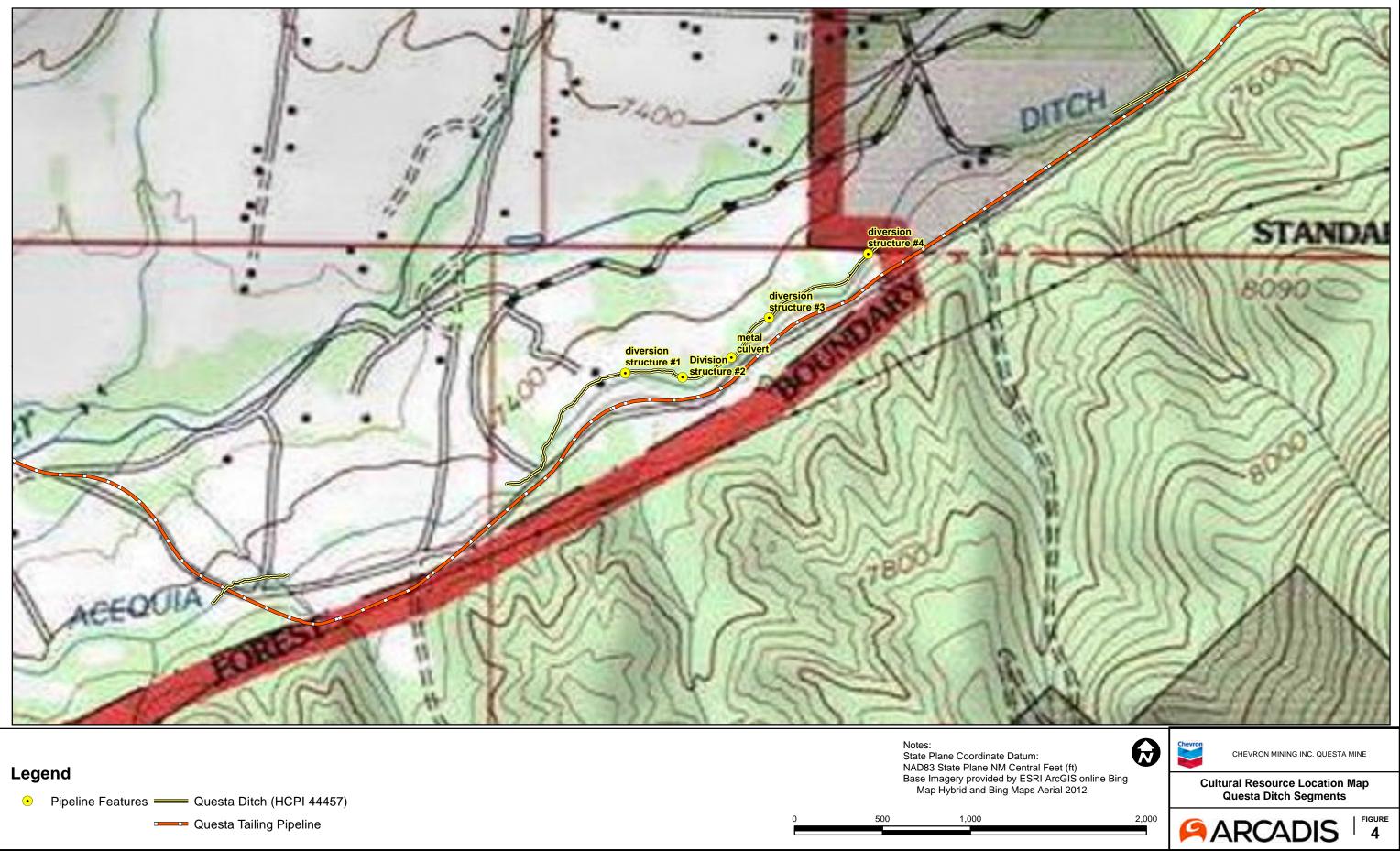
[ ] Other Attachments (Describe):

 24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

 Principal Investigator/Qualified Supervisor:
 Printed Name: Dulaney Barclay

Signature: Dulin Binchen Date: 1/12	118 Title: Principal Investigator			
25. Reviewing Agency	26. SHPO			
Reviewer's Name/Date:	Reviewer's Name/Date:			
Accepted [ ] Rejected [ ]	HPD Log #: Date sent to ARMS:			
CULTURAL RESOURCE				
[fill in appropriate section(s	)]			
SURVEY RESULTS:				
Archaeological Sites discovered and registered: 0				
Archaeological Sites discovered and NOT registered: $\boldsymbol{0}$				
Previously recorded archaeological sites revisited (site update f	orm required): 0			
Previously recorded archaeological sites not relocated (site upd	ate form required): 0			
TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0				
Total isolates recorded: 9	Non-selective isolate recording?			
HCPI properties discovered and registered: 2	-			
HCPI properties discovered and NOT registered: 0				
Previously recorded HCPI properties revisited: 0				
Previously recorded HCPI properties not relocated: 0				
TOTAL HCPI PROPERTIES (visited & recorded, including acequi	as): 2			
MANAGEMENT SUMMARY: Questa Citizens South Ditch (HCPI 44	457/LA83968) previously determined eligible for National Register.			
Only non-contributing portions of the Questa Citizens South Ditch (H	ICPI 44457/LA83968) are within the Area of Potential Effect.			
No adverse effects to Ditch from proposed project. No further work	is necessary.			
Thunder Bridge (HCPI 44458) is recommended not eligible for Natio	nal Register. No further work is necessary.			

NMCRIS No.:	139651			
<b>LA/HCPI No.</b> HCPI44457 HCPI44458	Field/Agency No. LA83968 CQTP-01	Eligible Y und N	? (Y/N/U, applicable cr er Criteria A, C, and D p	<b>iteria)</b> ber SHPO
Previously reco	orded revisited sites/HCPI properties:			
LA/HCPI No.	Field/Agency No.	Eligible	? (Y/N/U, applicable cri	iteria)
	A NUMBER LOG (site form required)	Previously rec	orded sites (site upda	, ite form required):
LA No.	Field/Agency No.	LA No.	Field/Agency No.	
Areas outside k	nown nearby site boundaries monitored?	[ ]Yes		[ ] No, Explain why:
TESTING & EXC	CAVATION LA NUMBER LOG (site form req	uired)		
Tested LA num	ber(s)	Excavated LA	number(s)	
				8



0	500	1,000



Mr. Clinton Chisler Mining Act Reclamation Program Mining and Minerals Division Energy, Minerals, and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505

#### Subject:

Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 140384)

#### Dear Mr. Chisler:

Enclosed please find our cultural resources inventory report for the Chevron Mining, Inc. (CMI) Questa Tailings Pipeline Removal Project in Taos County, New Mexico. The enclosed report covers Stage 2 Section A and portions of Stages 3 thru 8 that are located on CMI property. Five historic structures including the Elevated Trestle (HCPI 44844), Lower Dump Sump (HCPI 44845), Embargo Ditch (HCPI 44846), Acequia Del Molina (HCPI 44847) and Middle Ditch (HCPI 44848) were found within the Area of Potential Effect. The Embargo Ditch (HCPI 448446) is recommended as eligible for the National Register of Historic Places (NRHP) under Criterion C of the National Register Eligibility Criteria. The Embargo Ditch will not be adversely affected as the Tailings Pipeline will be abandoned in place where it crosses the Ditch. The other historic structures are all recommended as not eligible for inclusion in the NRHP as they fail to meet any of the Eligibility Criteria. The proposed project will therefore have No Adverse Effect on Historic Properties.

A copy of this report will also be attached to a Pre-Construction Notification (PCN) for the US Army Corp of Engineers (USACE) to fulfill the conditions for use of Nationwide Permit (NWP) 12. A USACE permit is required as the pipeline crosses the Red River, a jurisdictional waterway, in four locations within the current inventory area. The Embargo Ditch, Acequia Del Molina Ditch, and Middle Ditch are also considered jurisdictional waterways of the United States as they draw water from, and return water to, the Red River. A USACE NWP 12 for utility line activities is required for them as well. The USACE will have 30 days to review the PCN and determine if it is complete.

The report has been filed electronically with the New Mexico SHPO through the New Mexico Cultural Resources Information System (NMCRIS). A hard copy of this report has also been forwarded to Bob Estes, Staff Archaeologist at the New

**Environmental Business Consulting** 

Date: May 29, 2018

Contact: Dulaney Barclay

Phone: 720-344-3830

Email: dulaney.barclay@arcadis.co m

Our ref: B0046795.0075 Mr. Clinton Chisler May 29, 2018

Mexico Historic Preservation Division, for concurrence with the recommendations of eligibility and effect. The SHPO will have up to 30 days to comment and/or concur with these findings. Please feel free to contact me if you have any questions or concerns.

Sincerely,

Dulaney Barclay Senior Archaeologist

Arcadis U.S., Inc.

Copies:

Bob Estes, New Mexico Historic Preservation Division, Santa Fe, NM US Army Corp of Engineers, Albuquerque District, Albuquerque, NM

# NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

T

1. NMCRIS Activity No.: 140384	2a. Lead Agency: NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals Division	2b. Other Agency(ies):	3. Lead	d Agency Report No.:
4. Title of Report Questa Tailings F	ipeline Cultural Resources Inventory	Stages 2 Thru 8, Taos County, New	/ Mexico	5. Type of Report
Author(s) Dulaney Barclay				
6. Investigation	Гуре	and the second		1
Research Desi     Collections/Nor     Ethnographic S	n-Field Study		yTest E ]Overview/L Other	
7. Description of	Undertaking (what does the project	ct entail?):		
	conducted an inventory of approxima um Mine and the Tailings Facility.	tely 2.6 miles of the Questa Tailings	Pipeline tha	t extends between the

[ ] Continuation

8. Dates of Investigation: from: 05-Apr-2018	to: 16-May-2018	9. Report Date: 29-May-2018
10. Performing Agency/Consultant: ARCADIS		
Principal Investigator: Dulaney Barclay		
Field Supervisor: Dulaney Barclay		
Field Personnel Names:		
Historian / Other:		
11. Performing Agency/Consultant Report No.		
12. Applicable Cultural Resource Permit No(s	):	

14. Client/Customer Project No.:	
Address: PO Box 469, Questa, NM 87556	Phone: (575) 586-7571
Contact: Gabriel Herrera	
Chevron Mining Inc.	
13. Client/Customer (project proponent):	

### 15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	A	cres Surveyed	Acres in APE
Chevron Mining Inc.	an a la cara anna anna anna anna anna anna ann	32.90	32.90
	TOTALS	32.90	32.90

.

### 16. Records Search(es):

Date(s) of HPD/ARMS File Rev	view: Na	ame of Reviewer(s):					
12/8/2017; 3/5/2018; 3/6/20	18	Dulaney Barclay			Dulaney Barclay		
Date(s) of Other Agency File R	eview: Na	ame of Reviewer(s):		Agency:			
17. Survey Data:							
a. Source Graphics [ ] NA	AD 27 [X] NAC	Note: NAD 8	3 is the NMCR	IS standard.			
✓ USGS 7.5' (1:24,000) top	o map 🗌 Other topo	map, Scale:					
GPS Unit Accuracy	<1.0m 🗌 1-10m 🔲	10-100m		Aerial Photo(s)			
Other Source Graphic(s):							
b. USGS 7.5' Topographic N	lap Name			USGS Quad Code			
Questa, NM				36105-F5			
Red River, NM			antoni starovi datkar vrteti bir ili	36105-F4			
c. County(ies): TAOS							
d. Nearest City or Town:							
e. Legal Description:							
Township (N/S)	Range (E/W)		Section				
29N	13E	3	1				
28N	13E	6					
Projected legal description	? [ ]Yes	[X]No	[ ] Unpl	atted			

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

Intensity:	✓ 100% cover	age 🗌 <100°	% coverage				
Configuration:	block survey un	nits 🔽 linear	✓ linear survey units (I x w):				
other survey	units (specify):						
Scope: Inon	-selective (all sites	properties recorde	d) selective/t	hematic (selected	d sites/properties	s recorded)	
Coverage Metho	d: systematic	pedestrian coverag	e				
other method	d (describe):						
Survey Interval (	<b>m):</b> 15 Cr	ew Size: 2	Fieldwork Dates	from: 05-Apr-2	2018 to:	16-May-2018	
Survey Person F	lours: 16.00	Recordin	g Person Hours:	16.00	Total Hours:	32.00	
Additional Narra	tive:						

[ ] Continuation

#### 19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Project is situated in the Red River Valley of north-central New Mexico at elevation of 7400-7480 feet above mean sea level. It is located within a High Desert Shrub vegetative community and includes scrub pines, junipers, sagebrush, cactus, and scrub oak. Riparian areas along Red River have thick grasses, mixed forbs, cottonwood trees, and willows.

[ ] Continuation

20.a. Percent Ground Visibility:

b. Condition of Survey Area (grazed, bladed, undistributed, etc.):

Visibility ranges from 30% in riparian areas to 80% in open areas. Project area has been impacted by grazing and development including mine and residential development.

21. CULTURAL RESOURCE FINDINGS

✓ Yes, see next report section

[ ] Continuation

No, discuss why:

[ ] Continuation

22. Attachments (check all appropriate boxes):

[X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[X] Copy of NMCRIS Map Check (required)

- [ ] LA Site Forms new sites (with sketch map & topographic map) if applicable
- [ ] LA Site Forms (update) previously recorded & un-relocated sites (first 2 pages minimum)
- [X] Historic Cultural Property Inventory Forms, if applicable
- [ ] List and Description of Isolates, if applicable
- [ ] List and Description of Collections, if applicable

 24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

 Principal Investigator/Qualified Supervisor:
 Printed Name: Dulaney Barclay

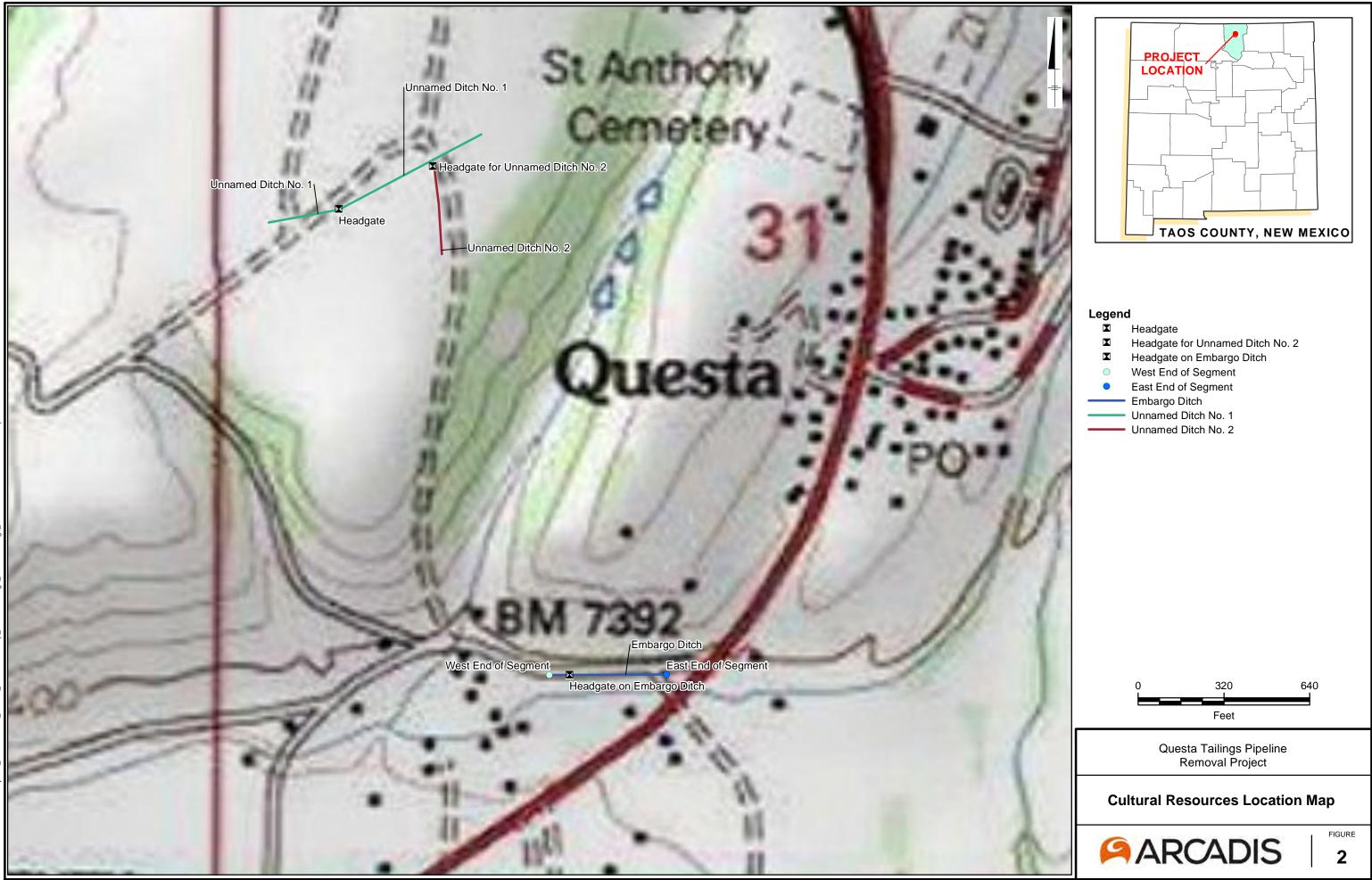
Signature: Dulin Binchy Date: 5	29/18 Title: Principal Investigator
25. Reviewing Agency	26. SHPO
Reviewer's Name/Date:	Reviewer's Name/Date:
Accepted [ ] Rejected [ ]	HPD Log #: Date sent to ARMS:
CULTURAL RESOUR	CE FINDINGS
[fill in appropriate section	on(s)]
Anthropological Cites discovered and registered a	
Archaeological Sites discovered and registered: 0 Archaeological Sites discovered and NOT registered: 0	
Previously recorded archaeological sites revisited (site upda	to form required).
Previously recorded archaeological sites not relocated (site	
TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0	apuale form required).
Total isolates recorded: 0	
HCPI properties discovered and registered: 5	Non-selective isolate recording?
HCPI properties discovered and NOT registered: 0	
Previously recorded HCPI properties revisited: 0	
Previously recorded HCPI properties not relocated: 0	생각님 그는 것이 많은 것이 같아요.
TOTAL HCPI PROPERTIES (visited & recorded, including acc	equias): 5
	of Potential Effect consisting of two structures associated with the

Tailings Pipeline and three historic ditches (acequias). Only one resources is evaluated as eligible for inclusion in the National Register. The Embargo Ditch (HCPI44846) is recommended eligible for the National Register under Criterion C as representative of middle to late 19th Century acequia in the Red River Valley. All other resources are recommended not eligible for the National Register.

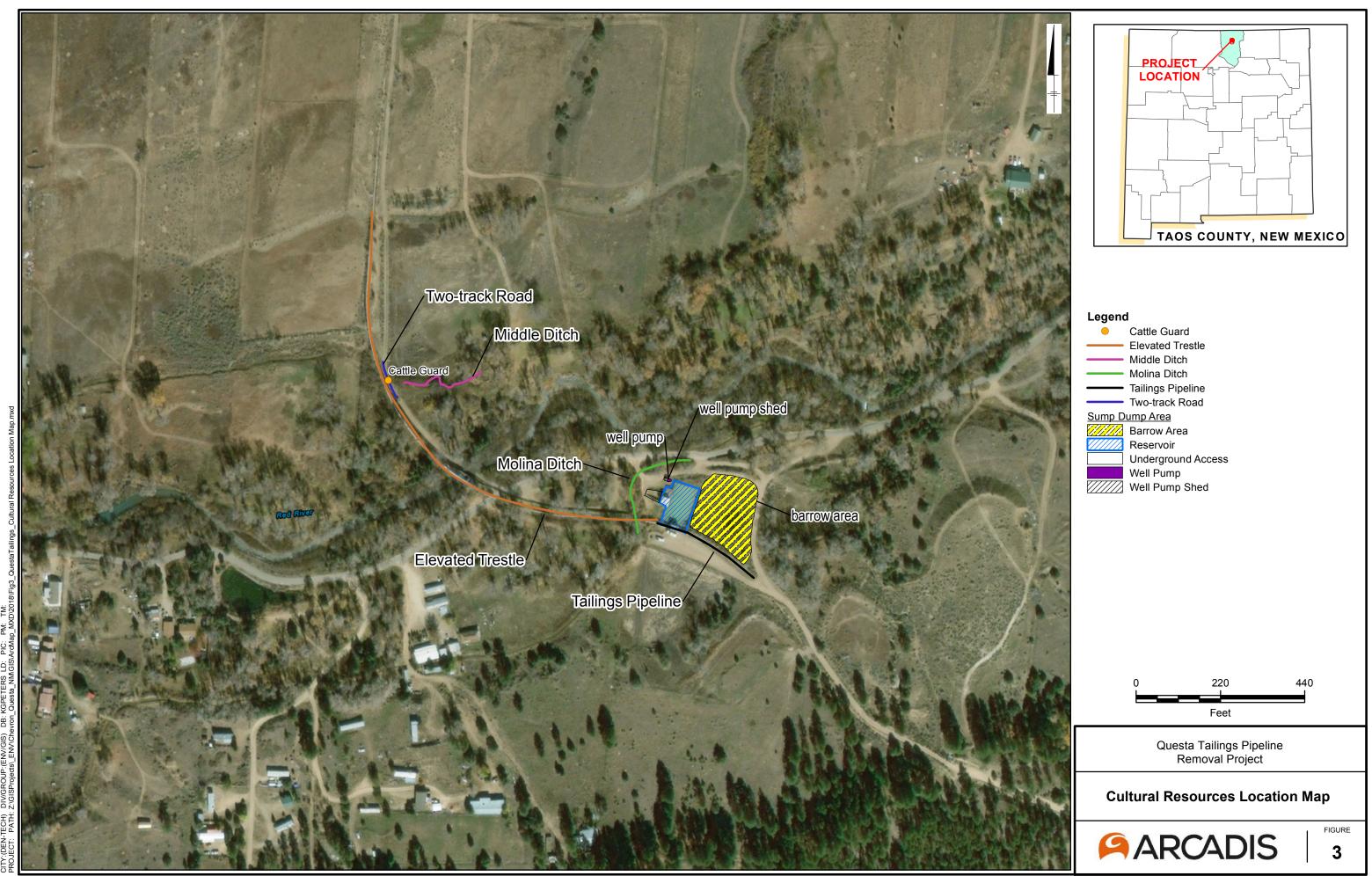
[ ] Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

NMCRIS No.	: 140384			
HCPI44844		Ν		
HCPI44845		Ν		
HCPI44846		Y, Crite	rion C	
HCPI44847		N		
HCPI44848		Ν		
Previously rec	corded revisited sites/HCPI properties:			
LA/HCPI No.	Field/Agency No.	Eligible? (Y/	V/U, applicable crite	eria)
MONITORING	LA NUMBER LOG (site form required)	3 11000 <b>20070 4 1</b> 1 1 1 1 1		
Sites Discover	red (site form required):	Previously recorde	d sites (site update	form required):
LA No.	Field/Agency No.	LA No. Fi	eld/Agency No.	
Areas outside	known nearby site boundaries monitored?	[ ] Yes		[ ] No, Explain why:
TESTING & EX	CAVATION LA NUMBER LOG (site form req	uired)		ç
Tested LA nun	nber(s)	Excavated LA num	ber(s)	



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**APPENDIX B** 

SITE PHOTOGRAPHS





Photo 1. Lower Dump Sump, Viewed from East, Within Stage 8 Boundary



Photo 2. Southwest Support Building and Electrical Transformers, Viewed from South of Sump, Within Site Boundary



Photo 3. Southern Support Building, Viewed from West, Within Site Boundary



Photo 4. Ramped Access, Viewed from West, Within Site Boundary

APPENDIX C

PCB SAMPLING MEMORANDUM





## memorandum

To:	Chevron Mining, Inc.
From:	Mr. Loren Eldridge-Looker, Trihydro Corporation
Date:	September 25, 2018
	Questa Mine Lower Dump Sump
Re:	Transformer PCB Soil Sampling

In accordance with Trihydro Corporation's (Trihydro) *Historic Tailing Spills Removal Action Work Plan and Stage 8 Pipeline Removal Work Plan* (Work Plan), dated August 10, 2018, four soil samples were collected at the Questa Mine Lower Dump Sump. These samples were collected on September 5, 2018 and analyzed for nine Aroclor Polychlorinated Biphenyls (PCBs) using EPA SW-846 Method 8082A. The sample locations are shown in Figure 4-1 of the Work Plan and were collected from the 0- to 12-inch soil interval. Figure 4-1 with sample identification callouts is included with this memorandum.

Prior to conducting sampling activities, the sampling protocol from the Work Plan was reviewed. The four samples correlated with the four electrical transformers at the Lower Dump Sump, and are summarized in Table 1 below:

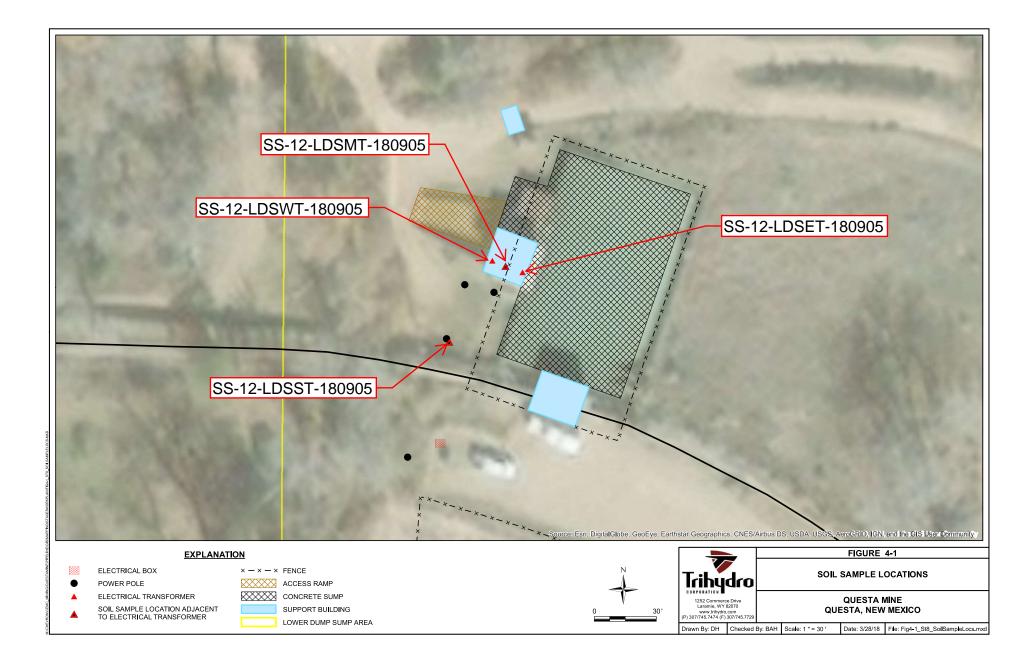
Sample	Location		Collection	Collection	Lab Analysis
Identification	Description	(in.)	Date	Time	Result
SS-12-LDSWT-180905	Westernmost pad-mounted transformer	0-12	9/5/2018	8:30	No Detection
SS-12-LDSMT-180905	Middle pad-mounted transformer	0-12	9/5/2018	8:45	No Detection
SS-12-LDSET-180905	Easternmost pad-mounted transformer	0-12	9/5/2018	9:00	No Detection
SS-12-LDSST-180905	Southern pole-mounted transformer	0-12	9/5/2018	9:20	No Detection

Table 1. Lower Dump Sump PCB Sample Summary

A stainless-steel hand trowel was used to fill the 4-ounce amber glass jar required for each sample. In between each sample location, the trowel was decontaminated with an Alconox scrub and wash and two rinses of deionized water. Once filled, the jars were sealed, labeled, and placed in the sample cooler with ice. A Chain of Custody (COC) form was completed and added to the cooler once all samples were collected.

The sample cooler was hand delivered to TestAmerica Laboratories, Inc. (TestAmerica) in Arvada, CO on the morning of September 6, 2018. All four samples were prepared for analysis by TestAmerica on September 7, 2018 and analyzed on September 15, 2018. TestAmerica provided their Analytical Report to Trihydro on September 18, 2018 and listed "No Detections" for PCBs at all four sample locations. A copy of the Analytical Report is attached to this memorandum.

476-027-002





THE LEADER IN ENVIRONMENTAL TESTING

## **ANALYTICAL REPORT**

#### TestAmerica Laboratories, Inc.

TestAmerica Denver 4955 Yarrow Street Arvada, CO 80002 Tel: (303)736-0100

#### TestAmerica Job ID: 280-113987-1 Client Project/Site: Questa Pipeline

#### For:

..... Links

Review your project results through

**Total** Access

Have a Question?

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Trihydro Corporation 15000 West 6th Ave. Service Road Unit 100 Golden, Colorado 80401

Attn: Mr. Shaun Harshman

man Rydery

Authorized for release by: 9/18/2018 6:59:39 PM Donna Rydberg, Senior Project Manager (303)736-0192

donna.rydberg@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

## **Table of Contents**

Cover Page	1
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Definitions	3
Case Narrative	4
Detection Summary	5
Method Summary	6
Sample Summary	7
Client Sample Results	8
QC Association	10
QC Sample Results	11
Chronicle	13
Chain of Custody	14
Receipt Checklists	15

#### Qualifiers

#### GC Semi VOA

GC Semi VC	A	
Qualifier	Qualifier Description	
F1	MS and/or MSD Recovery is outside acceptance limits.	E
F2	MS/MSD RPD exceeds control limits	3
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	

#### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	8
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	9
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	10
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	11
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	12
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	13
MDA	Minimum Detectable Activity (Radiochemistry)	15
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEQ Toxicity Equivalent Quotient (Dioxin)

#### Job ID: 280-113987-1

#### Laboratory: TestAmerica Denver

Narrative

#### **CASE NARRATIVE**

#### **Client: Trihydro Corporation**

**Project: Questa Pipeline** 

#### Report Number: 280-113987-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

#### <u>RECEIPT</u>

The samples were received on 9/6/2018 at 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.3° C.

#### POLYCHLORINATED BIPHENYLS (PCBS)

Samples SS-12-LDSWT-180905 (280-113987-1), SS-12-LDSMT-180905 (280-113987-2), SS-12-LDSET-180905 (280-113987-3) and SS-12-LDSST-180905 (280-113987-4) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A. The samples were prepared on 09/07/2018 and analyzed on 09/15/2018.

PCB-1016 failed the recovery criteria high for the MS of sample SS-12-LDSST-180905MS (280-113987-4) in batch 280-429668. PCB-1016 also exceeded the RPD limit. The associated LCS was in control and provides evidence that operating procedures were in control.

The following samples required a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: SS-12-LDSWT-180905 (280-113987-1), SS-12-LDSMT-180905 (280-113987-2), SS-12-LDSET-180905 (280-113987-3), SS-12-LDSST-180905 (280-113987-4), (LCS 280-428823/2-A), (MB 280-428823/1-A), (280-113987-A-4-B MS) and (280-113987-A-4-C MSD). Sulfuric acid lot # 186983 for prep batch 428823.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Trihydro Corporation Project/Site: Questa Pipeline TestAmerica Job ID: 280-113987-1

Client Sample ID: SS-12-LDSWT-180905	Lab Sample ID: 280-113987-1	
No Detections.		
Client Sample ID: SS-12-LDSMT-180905	Lab Sample ID: 280-113987-2	5
No Detections.		6
Client Sample ID: SS-12-LDSET-180905	Lab Sample ID: 280-113987-3	
No Detections.		7
Client Sample ID: SS-12-LDSST-180905	Lab Sample ID: 280-113987-4	8
No Detections.		9

This Detection Summary does not include radiochemical test results.

#### Client: Trihydro Corporation Project/Site: Questa Pipeline

Method	Method Description	Protocol	Laboratory
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL DEN
3546	Microwave Extraction	SW846	TAL DEN

#### **Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

**TestAmerica** Denver

#### **Sample Summary**

#### Client: Trihydro Corporation Project/Site: Questa Pipeline

Lab Sample ID	Client Sample ID	Matrix	Collected Received
280-113987-1	SS-12-LDSWT-180905	Solid	09/05/18 08:30 09/06/18 09:15
280-113987-2	SS-12-LDSMT-180905	Solid	09/05/18 08:45 09/06/18 09:15
280-113987-3	SS-12-LDSET-180905	Solid	09/05/18 09:00 09/06/18 09:15
280-113987-4	SS-12-LDSST-180905	Solid	09/05/18 09:20 09/06/18 09:15

Lab Sample ID: 280-113987-1

Matrix: Solid

#### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

#### Client Sample ID: SS-12-LDSWT-180905 Date Collected: 09/05/18 08:30 Date Received: 09/06/18 09:15

#### Result Qualifier MDL Unit D Dil Fac Analyte RL Prepared Analyzed PCB-1221 ND 91 30 09/07/18 06:48 09/15/18 00:24 ug/Kg 1 PCB-1016 ND 09/15/18 00:24 64 ug/Kg 09/07/18 06:48 9.9 1 PCB-1232 ND 64 9.9 ug/Kg 09/07/18 06:48 09/15/18 00:24 1 PCB-1242 ND 64 18 ug/Kg 09/07/18 06:48 09/15/18 00:24 1 PCB-1248 ND 64 11 ug/Kg 09/07/18 06:48 09/15/18 00:24 1 PCB-1254 ND 64 11 ug/Kg 09/07/18 06:48 09/15/18 00:24 1 PCB-1260 ND 64 5.1 ug/Kg 09/07/18 06:48 09/15/18 00:24 1 PCB-1262 ND 64 22 ug/Kg 09/07/18 06:48 09/15/18 00:24 1 PCB-1268 ND 7.6 ug/Kg 09/07/18 06:48 09/15/18 00:24 64 1 Polychlorinated biphenyls, Total ND 64 5.1 ug/Kg 09/07/18 06:48 09/15/18 00:24 1 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 28 09/07/18 06:48 09/15/18 00:24 1

Tetrachloro-m-xylene	64	53 - 128
DCB Decachlorobiphenyl	86	59 - 130

#### Client Sample ID: SS-12-LDSMT-180905 Date Collected: 09/05/18 08:45 Date Received: 09/06/18 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		91	30	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1016	ND		64	9.9	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1232	ND		64	9.9	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1242	ND		64	18	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1248	ND		64	11	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1254	ND		64	11	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1260	ND		64	5.1	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1262	ND		64	22	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1268	ND		64	7.6	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
Polychlorinated biphenyls, Total	ND		64	5.1	ug/Kg		09/07/18 06:48	09/15/18 00:46	1

Surrogate	%Recovery Qualifier	Limits
Tetrachloro-m-xylene	88	53 - 128
DCB Decachlorobiphenyl	87	59 - 130

#### Client Sample ID: SS-12-LDSET-180905 Date Collected: 09/05/18 09:00

#### Date Received: 09/06/18 09:15 Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac PCB-1221 ND 93 31 ug/Kg 09/07/18 06:48 09/15/18 01:08 1 ND 65 PCB-1016 10 ug/Kg 09/07/18 06:48 09/15/18 01:08 1 PCB-1232 ND 65 ug/Kg 09/07/18 06:48 09/15/18 01:08 10 1 PCB-1242 ND 65 09/07/18 06:48 09/15/18 01:08 18 ug/Kg 1 PCB-1248 ND 65 11 ug/Kg 09/07/18 06:48 09/15/18 01:08 1 PCB-1254 ND 65 09/07/18 06:48 09/15/18 01:08 11 ug/Kg 1 PCB-1260 ND 65 5.2 ug/Kg 09/07/18 06:48 09/15/18 01:08 1 PCB-1262 ND 65 23 ug/Kg 09/07/18 06:48 09/15/18 01:08 1 PCB-1268 ND 65 7.8 ug/Kg 09/07/18 06:48 09/15/18 01:08 1 Polychlorinated biphenyls, Total ND 65 5.2 ug/Kg 09/07/18 06:48 09/15/18 01:08 1

Lab Sample ID: 280-113987-2 Matrix: Solid

09/07/18 06:48 09/15/18 00:24

09/07/18 06:48	09/15/18 00:46	1
09/07/18 06:48	09/15/18 00:46	1
09/07/18 06:48	09/15/18 00:46	1
09/07/18 06:48	09/15/18 00:46	1
09/07/18 06:48	09/15/18 00:46	1
09/07/18 06:48	09/15/18 00:46	1
Prepared	Analyzed	Dil Fac
09/07/18 06:48	09/15/18 00:46	1
09/07/18 06·48	09/15/18 00:46	1

#### Lab Sample ID: 280-113987-3 Matrix: Solid

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#### **Client Sample Results**

#### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

<b>Surrogate</b> Tetrachloro-m-xylene DCB Decachlorobiphenyl	<b>%Recovery</b> 88 90		Limits 53 - 128 59 - 130				<b>Prepared</b> 09/07/18 06:48 09/07/18 06:48		<b>Dil Fac</b> 1 1	4
Client Sample ID: SS-12-LDS Date Collected: 09/05/18 09:2	20						Lab Sam	ple ID: 280-11 Matrix	3987-4 :: Solid	5 6
Date Received: 09/06/18 09:1 Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
PCB-1221	ND		92	31	ug/Kg		09/07/18 06:48	-	1	
PCB-1016	ND	F2 F1	65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	8
PCB-1232	ND		65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	
PCB-1242	ND		65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	C
PCB-1248	ND		65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	
PCB-1254	ND		65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	
PCB-1260	ND		65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	
PCB-1262	ND		65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	
PCB-1268	ND		65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	
Polychlorinated biphenyls, Total	ND		65		ug/Kg		09/07/18 06:48	09/15/18 01:29	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
Tetrachloro-m-xylene	95		53 - 128				09/07/18 06:48	09/15/18 01:29	1	
DCB Decachlorobiphenyl	77		59 - 130				09/07/18 06:48	09/15/18 01:29	1	

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#### Prep Batch: 428823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-113987-1	SS-12-LDSWT-180905	Total/NA	Solid	3546	
280-113987-2	SS-12-LDSMT-180905	Total/NA	Solid	3546	
280-113987-3	SS-12-LDSET-180905	Total/NA	Solid	3546	
280-113987-4	SS-12-LDSST-180905	Total/NA	Solid	3546	
MB 280-428823/1-A	Method Blank	Total/NA	Solid	3546	
LCS 280-428823/2-A	Lab Control Sample	Total/NA	Solid	3546	
280-113987-4 MS	SS-12-LDSST-180905	Total/NA	Solid	3546	
280-113987-4 MSD	SS-12-LDSST-180905	Total/NA	Solid	3546	
nalysis Batch: 4290	668				
nalysis Batch: 4290	568				
nalysis Batch: 4290	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batcl
Lab Sample ID		Prep Type Total/NA	Matrix Solid	Method 8082A	Prep Batcl
Lab Sample ID 280-113987-1	Client Sample ID	<u> </u>			428823
Lab Sample ID 280-113987-1 280-113987-2	Client Sample ID SS-12-LDSWT-180905	Total/NA	Solid	8082A	
-	Client Sample ID SS-12-LDSWT-180905 SS-12-LDSMT-180905	Total/NA Total/NA	Solid Solid	8082A 8082A	428823 428823 428823 428823
Lab Sample ID 280-113987-1 280-113987-2 280-113987-3	Client Sample ID SS-12-LDSWT-180905 SS-12-LDSMT-180905 SS-12-LDSET-180905	Total/NA Total/NA Total/NA	Solid Solid Solid	8082A 8082A 8082A	428823 428823 428823 428823 428823
Lab Sample ID 280-113987-1 280-113987-2 280-113987-3 280-113987-4	Client Sample ID SS-12-LDSWT-180905 SS-12-LDSMT-180905 SS-12-LDSET-180905 SS-12-LDSST-180905	Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid	8082A 8082A 8082A 8082A	428823
Lab Sample ID 280-113987-1 280-113987-2 280-113987-3 280-113987-4 MB 280-428823/1-A	Client Sample ID SS-12-LDSWT-180905 SS-12-LDSMT-180905 SS-12-LDSET-180905 SS-12-LDSST-180905 Method Blank	Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid	8082A 8082A 8082A 8082A 8082A 8082A	42882: 42882: 42882: 42882: 42882: 42882: 42882:

10

#### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lub Gumple ID. MD Log 4	28823/1-A							Clie	ent Samp	ole ID: Method	d Blank
Matrix: Solid										Prep Type: To	otal/NA
Analysis Batch: 429668										Prep Batch:	428823
		B MB									
Analyte		It Qualifier	RL	N		Unit			repared	Analyzed	Dil Fa
PCB-1221	N	ID	88		29	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	
PCB-1016	Ν	ID	61		9.5	ug/Kg	l	09/0	07/18 06:48	09/14/18 23:40	
PCB-1232	Ν	ID	61		9.5	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	
PCB-1242	N	ID	61		17	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	
PCB-1248	Ν	ID	61		10	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	
PCB-1254	Ν	ID	61		10	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	
PCB-1260	N	ID	61		4.9	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	
PCB-1262	Ν	ID	61		22	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	
PCB-1268	Ν	ID	61		7.4	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	
Polychlorinated biphenyls, Total	N	ID	61		4.9	ug/Kg		09/0	07/18 06:48	09/14/18 23:40	• • • • •
	-					- 0					
		IB MB						_			
Surrogate		ry Qualifier	Limits						Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene		03	53 - 128							09/14/18 23:40	
DCB Decachlorobiphenyl	1	02	59 - 130					09/0	07/18 06:48	8 09/14/18 23:40	
Analyte			Added	Result		IIIIei	Unit	D	%Rec	Limits	
				Result	Quu	inter	Unit	D	%Rec	Limits	
PCB-1016			128 128	150 127	Quu		Unit ug/Kg ug/Kg	D	99	54 - 132 62 - 129	
PCB-1016			128	150			ug/Kg	D	117	54 - 132	
PCB-1016 PCB-1260	LCS L		128 128	150			ug/Kg	<u>D</u>	117	54 - 132	
Analyte PCB-1016 PCB-1260 Surrogate Tetrachloro-m-vulene	%Recovery G		128 128 <i>Limits</i>	150			ug/Kg	<u>D</u>	117	54 - 132	
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene	%Recovery 110		128 128 <i>Limits</i> 53 - 128	150			ug/Kg	D	117	54 - 132	
PCB-1016 PCB-1260 <b>Surrogate</b> Tetrachloro-m-xylene	%Recovery G		128 128 <i>Limits</i>	150			ug/Kg	D	117	54 - 132	
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398	<b>%Recovery</b> 110 106		128 128 <i>Limits</i> 53 - 128	150			ug/Kg ug/Kg		<u>117</u> 99	54 - 132 62 - 129 6 <b>S-12-LDSST-</b>	
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398	<b>%Recovery</b> 110 106		128 128 <i>Limits</i> 53 - 128	150			ug/Kg ug/Kg		<u>117</u> 99	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid	%Recovery 4 110 106 87-4 MS	ualifier	128 128 <b>Limits</b> 53 - 128 59 - 130	150 127			ug/Kg ug/Kg		<u>117</u> 99	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch:	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668	%Recovery         G           110         106           37-4 MS         Sample	ample	128 128 <i>Limits</i> 53 - 128 59 - 130 <b>Spike</b>	150 127 MS	MS		ug/Kg ug/Kg Client		<u>117</u> 99	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec.	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte	%RecoveryG11010637-4 MSSampleSResultG	ample Qualifier	128 128 <i>Limits</i> 53 - 128 59 - 130 Spike Added	150 127 MS Result	MS Qua		ug/Kg ug/Kg Client		117 99 nple ID: S %Rec	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec. Limits	otal/NA
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte PCB-1016	%Recovery     G       110     106       37-4 MS       Sample       Result       ND	ample Qualifier	128 128 53 - 128 59 - 130 Spike Added 123	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client	Sam	<u>– 117</u> 99 <b>– 117</b> – 99 <b>– 117</b> –	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec. Limits 54 - 132	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte PCB-1016	%RecoveryG11010637-4 MSSampleSResultG	ample Qualifier	128 128 <i>Limits</i> 53 - 128 59 - 130 Spike Added	150 127 MS Result	MS Qua		ug/Kg ug/Kg Client	Sam	117 99 nple ID: S %Rec	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec. Limits	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte PCB-1016	%Recovery     G       110     106       37-4 MS       Sample       Result       ND       ND	ample Qualifier 2 F1	128 128 53 - 128 59 - 130 Spike Added 123	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client	Sam	<u>– 117</u> 99 <b>– 117</b> – 99 – <b>– 117</b> –	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec. Limits 54 - 132	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte PCB-1016 PCB-1260	%Recovery     G       110     106       37-4 MS     Sample       Sample     S       Result     G       ND     F       ND     MS	ample Qualifier 2 F1	128 128 <i>Limits</i> 53 - 128 59 - 130 <b>Spike</b> Added 123 123	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client	Sam	<u>– 117</u> 99 <b>– 117</b> – 99 – <b>– 117</b> –	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec. Limits 54 - 132	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte PCB-1016 PCB-1260 Surrogate	%Recovery G %Recovery G %Recovery G %Recovery G %Recovery G	ample Qualifier 2 F1	128 128 <i>Limits</i> 53 - 128 59 - 130 Spike Added 123 123 Limits	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client	Sam	<u>– 117</u> 99 <b>– 117</b> – 99 – <b>– 117</b> –	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec. Limits 54 - 132	otal/N/
PCB-1016         PCB-1260         Surrogate         Tetrachloro-m-xylene         DCB Decachlorobiphenyl         _ab Sample ID: 280-11398         Matrix: Solid         Analysis Batch: 429668         Analyte         PCB-1016         PCB-1260         Surrogate         Fetrachloro-m-xylene	%Recovery         G           110         106           87-4 MS         Sample           Sample         S           Result         G           ND         F           ND         MS           MS         MS           %Recovery         G           98         98	ample Qualifier 2 F1	128 128 53 - 128 59 - 130 Spike Added 123 123 123 Limits 53 - 128	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client	Sam	<u>– 117</u> 99 <b>– 117</b> – 99 – <b>– 117</b> –	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec. Limits 54 - 132	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene	%Recovery G %Recovery G %Recovery G %Recovery G %Recovery G	ample Qualifier 2 F1	128 128 <i>Limits</i> 53 - 128 59 - 130 Spike Added 123 123 Limits	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client	Sam	<u>– 117</u> 99 <b>– 117</b> – 99 – <b>– 117</b> –	54 - 132 62 - 129 SS-12-LDSST- Prep Type: To Prep Batch: %Rec. Limits 54 - 132	otal/N/
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl	%Recovery         G           110         106           87-4 MS         Sample           Sample         S           Result         G           ND         F           ND         MS           %Recovery         G           98         94	ample Qualifier 2 F1	128 128 53 - 128 59 - 130 Spike Added 123 123 123 Limits 53 - 128	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client Unit ug/Kg ug/Kg	: Sam	<u>117</u> 99 <b>ople ID: S</b> <u>%Rec</u> 171 81	54 - 132 62 - 129 65 - 12 - 129 65 - 12 - LDSST- Prep Type: To Prep Batch: %Rec. Limits 54 - 132 62 - 129	otal/N/ 42882: -
PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668 Analyte PCB-1016 PCB-1016 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Lab Sample ID: 280-11398	%Recovery         G           110         106           87-4 MS         Sample           Sample         S           Result         G           ND         F           ND         MS           %Recovery         G           98         94	ample Qualifier 2 F1	128 128 53 - 128 59 - 130 Spike Added 123 123 123 Limits 53 - 128	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client Unit ug/Kg ug/Kg	: Sam	<u>117</u> 99 <b>ple ID: S</b> <u>%Rec</u> 171 81	54 - 132 62 - 129 62 - 129 62 - 129 7rep Type: To Prep Batch: %Rec. Limits 54 - 132 62 - 129 62 - 129	otal/N/ 42882 
PCB-1016 PCB-1260	%Recovery         G           110         106           87-4 MS         Sample           Sample         S           Result         G           ND         F           ND         MS           %Recovery         G           98         94	ample Qualifier 2 F1	128 128 53 - 128 59 - 130 Spike Added 123 123 123 Limits 53 - 128	150 127 MS Result 212	MS Qua		ug/Kg ug/Kg Client Unit ug/Kg ug/Kg	: Sam	<u>117</u> 99 <b>ple ID: S</b> <u>%Rec</u> 171 81	54 - 132 62 - 129 65 - 12 - 129 65 - 12 - LDSST- Prep Type: To Prep Batch: %Rec. Limits 54 - 132 62 - 129	otal/N/ 428823 

Analysis Daton. 420000									т тер Бе	<b>AUGH1</b> . <b>T</b>	0020
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
PCB-1016	ND	F2 F1	130	134	F2	ug/Kg		103	54 - 132	45	36
PCB-1260	ND		130	93.3		ug/Kg		72	62 - 129	6	44

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#### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 280-11398 Matrix: Solid Analysis Batch: 429668	7-4 MSD			Client Sample ID: SS-12-LDSST-180905 Prep Type: Total/NA Prep Batch: 428823
	MSD	MSD		
Surrogate	%Recovery	Qualifier	Limits	
Tetrachloro-m-xylene	87		53 - 128	
DCB Decachlorobiphenyl	81		59 - 130	

TestAmerica Denver

# Lab Sample ID: 280-113987-1 Matrix: Solid Lab Sample ID: 280-113987-2

Matrix: Solid

Matrix: Solid

#### Client Sample ID: SS-12-LDSWT-180905 Date Collected: 09/05/18 08:30 Date Received: 09/06/18 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.5 g	10 mL	428823	09/07/18 06:48	JT	TAL DEN
Total/NA	Analysis	8082A		1			429668	09/15/18 00:24	TDJ	TAL DEN

#### Client Sample ID: SS-12-LDSMT-180905 Date Collected: 09/05/18 08:45 Date Received: 09/06/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.5 g	10 mL	428823	09/07/18 06:48	JT	TAL DEN
Total/NA	Analysis	8082A		1			429668	09/15/18 00:46	TDJ	TAL DEN

#### Client Sample ID: SS-12-LDSET-180905 Date Collected: 09/05/18 09:00 Date Received: 09/06/18 09:15

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.2 g	10 mL	428823	09/07/18 06:48	JT	TAL DEN
Total/NA	Analysis	8082A		1			429668	09/15/18 01:08	TDJ	TAL DEN

#### Client Sample ID: SS-12-LDSST-180905 Date Collected: 09/05/18 09:20 Date Received: 09/06/18 09:15

#### Lab Sample ID: 280-113987-4 Matrix: Solid

Lab Sample ID: 280-113987-3

Prep T	уре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/N	IA	Prep	3546			15.3 g	10 mL	428823	09/07/18 06:48	JT	TAL DEN
Total/N	IA	Analysis	8082A		1			429668	09/15/18 01:29	TDJ	TAL DEN

#### Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Phone:	indier ioren ELDRIDGE-LOXER Mone. (307) 051-7753	-LOOKER	Lab PM: Rydber E-Mail: donna,	Lab PM: Rydberg, Donna R E-Mai. donna.rydberg@testamericainc.com	Carrier Tracking No(s)		coc No: 280-78789-25785,1 Page: Page 1 of 1
2					Analysis Requested		Job #:
Due	Due Date Requested:		Sec. Apple	R.C.			1
S	TAT Requested (days): STANDARD						A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - SNSNA02 D - Nitric Acid P - Na2O4S E - NaHSO4 O - N2204S
Pur	Po #: Purchase Order not required	ired	(0			3-21	F - MeOH K - Na25203 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
#OM	WO#: WO# 17-252WO-L		010				
Pro, 28(	Project#: 28017197		OA) OI	62 OL		enistr	K - EDIA W - pH 4- L - EDA Z - other (
SS	SSOW#:		dues	r) as		of co1	Other:
ŭ	Sample Date Time	Sample Type (C=comp, G=grab)	Matrix de (w-water, secold, O-wastold, BT-Thsue, A-Arc)	w/SM mighed		Total Number	Special Instructions/Note:
	$\langle \rangle$	Preserva		6 7		X	
6	9-5-18 08:30	9	Solid	XZN			
G	9-5-18 08:45	G	Soud	メスフ			
6	9-5-18 09:00	9	SOLID	XZZ		-	
6	9-5-18 09:20	G	Sourd P	XZZ			
				++-	280-113987 Chain of Custody	dy	
Poison B	B Unknown	Radiological		Sample Disp	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)  Return To Client  Mont	d if samples are retain	etained longer than 1 month) Archive For Months
				Special Instru	C Requirem		
	Date:			Time:		Method of Shipment:	
Starten "	Date/Time: 9-5-18 09:4 Date/Time:	45	Company TRIHNDRD Company	LD Received by Received by	A A	Date/Time: / 8 Date/Time:	0915 Company
(d	Date/Time:		Company	Received by	y.	Date/Time:	Company
				+	I I I I I I I I I I I I I I I I I I I		

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#### Client: Trihydro Corporation

#### Login Number: 113987 List Number: 1 Creator: Quint, Jessica A

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 280-113987-1

List Source: TestAmerica Denver



ACM AND LBP ANALYTICAL RESULTS

APPENDIX D



THE LEADER IN ENVIRONMENTAL TESTING

## **ANALYTICAL REPORT**

#### TestAmerica Laboratories, Inc.

TestAmerica Denver 4955 Yarrow Street Arvada, CO 80002 Tel: (303)736-0100

#### TestAmerica Job ID: 280-100940-1 Client Project/Site: Questa Pipeline - Lead and Asbestos

For: Trihydro Corporation

1252 Commerce Drive Laramie, Wyoming 82070

Attn: Tony Kupilik

Authorized for release by: 9/21/2017 4:43:36 PM Michelle Johnston, Project Manager II (303)736-0110 michelle.johnston@testamericainc.com

Designee for

Donna Rydberg, Senior Project Manager (303)736-0192 donna.rydberg@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

..... Links **Review your project** results through Total Access Have a Question? Ask-The Expert

Visit us at: www.testamericainc.com

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## **Definitions/Glossary**

#### Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

#### Glossarv

Glossary		3
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	5
CFL	Contains Free Liquid	3
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	8
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	9
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEQ Toxicity Equivalent Quotient (Dioxin)

#### Job ID: 280-100940-1

#### Laboratory: TestAmerica Denver

Narrative

#### **CASE NARRATIVE**

#### **Client: Trihydro Corporation**

#### **Project: Questa Pipeline - Lead and Asbestos**

#### Report Number: 280-100940-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

#### <u>RECEIPT</u>

The samples were received on 09/07/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 22.2 C.

TestAmerica Denver subcontracted the Asbestos analyses to EMLab P&K. A copy of their report has been included.

#### TOTAL METALS (ICP)

Samples L182817 (280-100940-8), L282817 (280-100940-9), L382817 (280-100940-10), L482817 (280-100940-11), L582817 (280-100940-12), L682817 (280-100940-13), L782817 (280-100940-14), L182917 (280-100940-33), L282917 (280-100940-34), L382917 (280-100940-35), L482917 (280-100940-36), L582917 (280-100940-37), L682917 (280-100940-38), L782917 (280-100940-39), L882917 (280-100940-40), L982917 (280-100940-41), L1082917 (280-100940-42), L1182917 (280-100940-43), L183017 (280-100940-57), L283017 (280-100940-58), BL183017 (280-100940-59), BL283017 (280-100940-60), BL383017 (280-100940-61), BL483017 (280-100940-62), BL583017 (280-100940-63) and BL683017 (280-100940-64) were analyzed for Total Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 09/11/2017 and analyzed on 09/12/2017 and 09/13/2017.

A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: There was insufficient volume to weigh out the SOP specified 1.0-1.5g for the following samples: L1182917 (280-100940-43), BL183017 (280-100940-59), BL283017 (280-100940-60), BL383017 (280-100940-61), BL483017 (280-100940-62), BL583017 (280-100940-63) and BL683017 (280-100940-64).

Samples L582817 (280-100940-12)[5X], L682817 (280-100940-13)[2X], L382917 (280-100940-35)[2X], L782917 (280-100940-39)[5X], L283017 (280-100940-58)[5X], BL183017 (280-100940-59)[10X], BL283017 (280-100940-60)[10X], BL383017 (280-100940-61)[5X], BL483017 (280-100940-62)[20X], BL583017 (280-100940-63)[5X] and BL683017 (280-100940-64)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-387084. Method precision and accuracy have been verified by the acceptable LCS/LCSD analyses data.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-387083. Method precision and accuracy have been verified by the acceptable LCS/LCSD analyses data.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead	and Asbe	estos				TestAmerica Jo	ob ID: 280-100940-1	2
Client Sample ID: A182817						Lab Sample I	D: 280-100940-1	
No Detections.								
Client Sample ID: A282817						Lab Sample I	D: 280-100940-2	5
No Detections.								6
Client Sample ID: A382817						Lab Sample I	D: 280-100940-3	
No Detections.								
Client Sample ID: A482817						Lab Sample I	D: 280-100940-4	8
No Detections.								9
Client Sample ID: A582817						Lab Sample I	D: 280-100940-5	
No Detections.								
Client Sample ID: A682817						Lab Sample I	D: 280-100940-6	
No Detections.								13
Client Sample ID: A782817						Lab Sample I	D: 280-100940-7	
No Detections.								
Client Sample ID: L182817						Lab Sample I	D: 280-100940-8	
Analyte		Qualifier	RL		Unit	Dil Fac D Metho		
Lead	540		0.77	0.27	mg/Kg	16010C	Total/NA	
Client Sample ID: L282817						Lab Sample I	D: 280-100940-9	
Analyte		Qualifier			Unit	Dil Fac D Metho		
Lead	590		0.66	0.23	mg/Kg	1 6010C	Total/NA	
Client Sample ID: L382817						Lab Sample ID	: 280-100940-10	
Analyte	Result	Qualifier	RL		Unit	Dil Fac D Metho		
Lead	590		0.75	0.26	mg/Kg	<u> </u>	Total/NA	
Client Sample ID: L482817						Lab Sample ID	: 280-100940-11	
Analyte		Qualifier	RL		Unit	Dil Fac D Metho		
Lead	570		0.82	0.28	mg/Kg	16010C	Total/NA	
Client Sample ID: L582817						Lab Sample ID	: 280-100940-12	
Analyte		Qualifier	RL		Unit	Dil Fac D Metho		
Lead	230		4.1	1.4	mg/Kg	<u> </u>	Total/NA	
Client Sample ID: L682817						Lab Sample ID	: 280-100940-13	

This Detection Summary does not include radiochemical test results.

		Detect	tion Sum	nmary	,				1
Client: Trihydro Corporatio Project/Site: Questa Pipelin		stos		-		TestAr	merica Job ID	: 280-100940-1	2
Client Sample ID: L6						Lab San	nole ID: 28	0-100940-13	
	•	-	DI	MDI	Unit		· · · · · · · · · · · · · · · · · · ·		
Analyte Lead	<b>Kesult</b> 29	Qualifier	<b>RL</b> 1.2	<b>MDL</b> 0.42	mg/Kg	$\frac{\text{Dir Fac}}{2}$	D Method 6010C	Total/NA	4
Client Sample ID: L78	82817					Lab San	nple ID: 28	0-100940-14	5
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type	
Lead	550		0.83	0.29	mg/Kg	1	6010C	Total/NA	
Client Sample ID: INS	S182817					Lab San	nple ID: 28	0-100940-15	8
No Detections.									
Client Sample ID: INS	S282817					Lab San	nple ID: 28	0-100940-16	9
No Detections.									
Client Sample ID: PL	182817					Lab San	nple ID: 28	0-100940-17	
No Detections.									
Client Sample ID: G1	82817					Lab San	nple ID: 28	0-100940-18	13
No Detections.									14
Client Sample ID: G2	82817					Lab San	nple ID: 28	0-100940-19	
No Detections.									
Client Sample ID: G3	82817					Lab San	nple ID: 28	0-100940-20	
No Detections.									
Client Sample ID: G4	82817					Lab San	nple ID: 28	0-100940-21	
No Detections.							•		
Client Sample ID: A1	82917					Lab San	nple ID: 28	0-100940-22	
No Detections.							•		
Client Sample ID: A2	82917					Lab Sar	nple ID: 28	0-100940-23	
No Detections.									
Client Sample ID: A3	82917					Lab San	nple ID: 28	0-100940-24	
No Detections.	-								
Client Sample ID: A4	82917					Lab San	nple ID: 28	0-100940-25	

No Detections.

This Detection Summary does not include radiochemical test results.

5

Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead	and Asbe	estos				TestAmerica Job ID	: 280-100940-1
Client Sample ID: A582917						Lab Sample ID: 28	0-100940-26
No Detections.							
Client Sample ID: A682917						Lab Sample ID: 28	0-100940-27
No Detections.							
Client Sample ID: A782917						Lab Sample ID: 28	0-100940-28
No Detections.							
Client Sample ID: A882917						Lab Sample ID: 28	0-100940-29
No Detections.							
Client Sample ID: A982917						Lab Sample ID: 28	0-100940-30
No Detections.							
Client Sample ID: A1082917						Lab Sample ID: 28	0-100940-31
No Detections.							
Client Sample ID: A1182917						Lab Sample ID: 28	0-100940-32
No Detections.							
Client Sample ID: L182917						Lab Sample ID: 28	0-100940-33
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Lead	670		0.73	0.25	mg/Kg	<u> </u>	Total/NA
Client Sample ID: L282917						Lab Sample ID: 28	0-100940-34
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Lead	500		0.87	0.30	mg/Kg	<u> </u>	Total/NA
Client Sample ID: 1 382917						Lah Sample ID: 28	0-100940-35

Client Sample ID: L382917								mp	ole ID: 28	0-100940-35
	Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
	Lead	480		1.5	0.53	mg/Kg	2	_	6010C	Total/NA

Client Sample ID: L482917						Lab Sa	mp	ole ID: 28	0-100940-36
 Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	450		0.73	0.25	mg/Kg	1	_	6010C	Total/NA
Client Sample ID: L582917						Lab Sa	mp	ole ID: 28	0-100940-37
Analyte	Result	Qualifier	RL	MDL	Unit			Method	Prep Type

#### Client Sample ID: L682917

Lab Sample ID: 280-100940-38

This Detection Summary does not include radiochemical test results.

Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos TestAmerica Job ID: 280-100940-1

Client Sample ID: L682917 (C	ontinu	ied)				Lab Sa	mple ID: 280	0-100940-3
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Lead	120		0.77	0.27	mg/Kg	1	6010C	Total/NA
Client Sample ID: L782917						Lab Sa	mple ID: 280	0-100940-3
Analyte	Result	Qualifier	RL		Unit		D Method	Prep Type
Lead	810		4.3	1.5	mg/Kg	5	6010C	Total/NA
Client Sample ID: L882917						Lab Sa	mple ID: 280	)-100940-4
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Lead	32		0.86	0.30	mg/Kg	1	6010C	Total/NA
Client Sample ID: L982917						Lab Sa	mple ID: 280	)-100940-4
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Lead	430		0.78	0.27	mg/Kg	1	6010C	Total/NA
Client Sample ID: L1082917						Lab Sa	mple ID: 280	0-100940-4
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Lead	460		0.72	0.25	mg/Kg	1	6010C	Total/NA
Client Sample ID: L1182917						Lab Sa	mple ID: 280	)-100940-4
Analyte	Result	Qualifier	RL		Unit	Dil Fac	D Method	Prep Type
Lead	290		1.1	0.38	mg/Kg	1	6010C	Total/NA
Client Sample ID: G182917						Lab Sa	mple ID: 280	)-100940-4
No Detections.							-	
Client Sample ID: G282917						Lab Sa	mple ID: 280	)-100940-4
No Detections.								
Client Sample ID: G382917						Lab Sa	mple ID: 280	0-100940-4
No Detections.								
Client Sample ID: G482917						Lab Sa	mple ID: 280	0-100940-4
No Detections.								
Client Sample ID: PL182917						Lab Sa	mple ID: 280	)-100940-4
No Detections.								
Client Sample ID: A183017						Lab Sa	mple ID: 280	)-100940-4
No Detections								

No Detections.

This Detection Summary does not include radiochemical test results.

**TestAmerica** Denver

Project/Site: Questa Pipeline - Lead a	and Asbe	estos						
Client Sample ID: A283017						Lab Sa	mple ID: 28	0-100940-50
No Detections.								
Client Sample ID: BA183017						Lab Sa	mple ID: 28	0-100940-51
No Detections.	_	_	_	_				
Client Sample ID: BA283017						Lab Sa	mple ID: 28	0-100940-52
No Detections.								
Client Sample ID: BA383017						Lab Sa	mple ID: 28	0-100940-53
No Detections.								
Client Sample ID: BA483017						Lab Sa	mple ID: 28	0-100940-54
No Detections.								
Client Sample ID: BA583017						Lab Sa	mple ID: 28	0-100940-55
No Detections.						-		
Client Sample ID: BA683017						Lab Sa	mole ID: 28	0-100940-56
No Detections.								
Client Sample ID: L183017						Lab Sa	mple ID: 28	0-100940-57
Analyte	Result	Qualifier	RL	MDL	Unit		D Method	Prep Type
Lead	330		0.99	0.34	mg/Kg	1	6010C	Total/NA
Client Sample ID: L283017						Lab Sa	mple ID: 28	0-100940-58
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Lead	380		5.0	1.7	mg/Kg	5	6010C	Total/NA
Client Sample ID: BL183017						Lab Sa	mple ID: 28	0-100940-59
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Lead	390		9.3		mg/Kg	10	6010C	Total/NA
Client Sample ID: BL283017						Lab Sa	mple ID: 28	0-100940-60
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Lead	340		8.3		mg/Kg	10		Total/NA
Client Sample ID: BL383017						Lab Sa	mple ID: 28	0-100940-61
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
lood	250		4.2	1 5	malla	E		

#### Lab Sample ID: 280-100940-62

6010C

5

This Detection Summary does not include radiochemical test results.

Client Sample ID: BL483017

250

Lead

Client: Trihydro Corporation

Total/NA

4.3

1.5 mg/Kg

		Detect	tion Sum	nmary	/		1				
Client: Trihydro Corporation Project/Site: Questa Pipeline - Le	ad and Asbe	estos		-		TestAmerica Job	DID: 280-100940-1				
Client Sample ID: BL4830	I7 (Contir	iued)				Lab Sample ID: 280-100940-62					
Analyte Lead	Result	Qualifier	<b>RL</b> 15		Unit mg/Kg	Dil Fac         D         Method           20         -         6010C	Prep Type Total/NA				
Client Sample ID: BL58307	17					Lab Sample ID:	280-100940-63				
Analyte Lead	Result 240	Qualifier	<b>RL</b> 5.5		Unit mg/Kg	$\frac{\text{Dil Fac}}{5} \stackrel{\textbf{D}}{=} \frac{\text{Method}}{6010C}$	Prep Type Total/NA				
Client Sample ID: BL6830	17					Lab Sample ID:	280-100940-64				
Analyte Lead	Result 5600	Qualifier	<b>RL</b> 5.6		Unit mg/Kg	Dil FacD5Method6010C	Prep Type Total/NA				
Client Sample ID: INS1830 No Detections.	17					Lab Sample ID:	280-100940-65				
Client Sample ID: INS2830	17					Lab Sample ID:	280-100940-66				
No Detections.							1:				
Client Sample ID: VG1830	17					Lab Sample ID:	280-100940-67				
Client Sample ID: VG2830	17					Lab Sample ID:	280-100940-68				
Client Sample ID: VG3830	17					Lab Sample ID:	280-100940-69				
Client Sample ID: PW1830 No Detections.	17					Lab Sample ID:	280-100940-70				
Client Sample ID: PW2830 No Detections.	17					Lab Sample ID:	280-100940-71				
Client Sample ID: PW3830 No Detections.	17					Lab Sample ID:	280-100940-72				
Client Sample ID: PW4830	17					Lab Sample ID:	280-100940-73				

No Detections.

This Detection Summary does not include radiochemical test results.

lethod	Method Description	Protocol	Laboratory
010C	Metals (ICP)	SW846	TAL DEN
sbestos - PLM y EPA 00/R-93/116 oric	General Sub Contract Method	NONE	
Protocol Refe NONE = NO			

#### Laboratory References:

Method

Asbestos - PLM

6010C

by EPA 600/R-93/116 (pric

> = EMLab P&K - Denver, 4955 Yarrow Street, Arvada, CO 80002 TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

0040 4	
0940-1	
eived	
17 09:15	
17 09:15	
17 09:15	5
17 09:15	5
17 09:15	
17 09:15	
17 09:15	7
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17 09:15	
17 09:15	ð
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17 09:15	9
17 09:15	
17 09:15	
17 09:15	
17 09:15	
17 09:15	
17 09:15	
17 09:15	
17 09:15	13
17 09:15	
17 09:15	
17 09:15	
17 09:15	

_ab Sample ID	Client Sample ID	Matrix	Collected Receive
280-100940-1	A182817	Solid	08/28/17 13:15 09/07/17 0
80-100940-2	A282817	Solid	08/28/17 13:54 09/07/17 0
80-100940-3	A382817	Solid	08/28/17 14:20 09/07/17 0
30-100940-4	A482817	Solid	08/28/17 14:40 09/07/17 0
80-100940-5	A582817	Solid	08/28/17 15:10 09/07/17 0
80-100940-6	A682817	Solid	08/28/17 15:35 09/07/17 0
80-100940-7	A782817	Solid	08/28/17 16:15 09/07/17 0
80-100940-8	L182817	Solid	08/28/17 13:15 09/07/17 0
80-100940-9	L282817	Solid	08/28/17 13:54 09/07/17 0
80-100940-10	L382817	Solid	08/28/17 14:20 09/07/17 0
80-100940-11	L482817	Solid	08/28/17 14:40 09/07/17 0
30-100940-12	L582817	Solid	08/28/17 14:50 09/07/17 0
80-100940-13	L682817	Solid	08/28/17 15:35 09/07/17 0
30-100940-14	L782817	Solid	08/28/17 16:15 09/07/17 0
80-100940-15	INS182817	Solid	08/28/17 15:55 09/07/17 0
30-100940-16	INS282817	Solid	08/28/17 15:55 09/07/17 0
30-100940-17	PL182817	Solid	08/28/17 15:55 09/07/17 0
30-100940-18	G182817	Solid	08/28/17 14:50 09/07/17 0
30-100940-19	G282817	Solid	08/28/17 14:50 09/07/17 0
80-100940-20	G382817	Solid	08/28/17 16:40 09/07/17 0
30-100940-21	G482817	Solid	08/28/17 16:40 09/07/17 0
30-100940-22	A182917	Solid	08/29/17 08:35 09/07/17 0
0-100940-23	A282917	Solid	08/29/17 09:10 09/07/17 0
80-100940-24	A382917	Solid	08/29/17 09:45 09/07/17 0
80-100940-25	A482917	Solid	08/29/17 10:05 09/07/17 0
30-100940-26	A582917	Solid	08/29/17 10:25 09/07/17 0
80-100940-27	A682917	Solid	08/29/17 11:05 09/07/17 0
30-100940-28	A782917	Solid	08/29/17 11:40 09/07/17 0
30-100940-29	A882917	Solid	08/29/17 11:40 09/07/17 0
80-100940-30	A982917	Solid	08/29/17 12:30 09/07/17 0
30-100940-31	A1082917		08/29/17 15:10 09/07/17 0
30-100940-31 30-100940-32	A1182917 A1182917	Solid Solid	08/29/17 15:10 09/07/17 0
80-100940-33	L182917	Solid	08/29/17 08:35 09/07/17 0
30-100940-34	L282917	Solid	08/29/17 09:10 09/07/17 0
30-100940-35	L382917	Solid	08/29/17 09:45 09/07/17 0
30-100940-36	L482917	Solid	08/29/17 10:05 09/07/17 0
30-100940-37	L582917	Solid	08/29/17 10:25 09/07/17 0
30-100940-38	L682917	Solid	08/29/17 11:05 09/07/17 0
30-100940-39	L782917	Solid	08/29/17 11:40 09/07/17 0
80-100940-40	L882917	Solid	08/29/17 11:55 09/07/17 0
30-100940-41	L982917	Solid	08/29/17 12:30 09/07/17 0
30-100940-42	L1082917	Solid	08/29/17 15:10 09/07/17 0
30-100940-43	L1182917	Solid	08/29/17 16:40 09/07/17 0
80-100940-44	G182917	Solid	08/29/17 09:20 09/07/17 0
0-100940-45	G282917	Solid	08/29/17 09:25 09/07/17 0
80-100940-46	G382917	Solid	08/29/17 10:20 09/07/17 0
30-100940-47	G482917	Solid	08/29/17 10:25 09/07/17 0
30-100940-48	PL182917	Solid	08/29/17 10:30 09/07/17 0
30-100940-49	A183017	Solid	08/30/17 09:40 09/07/17 0
30-100940-50	A283017	Solid	08/30/17 11:10 09/07/17 0
30-100940-51	BA183017	Solid	08/30/17 11:15 09/07/17 0
30-100940-52	BA283017	Solid	08/30/17 11:20 09/07/17 0
80-100940-53	BA383017	Solid	08/30/17 11:25 09/07/17 0

TestAmerica Denver

### Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client: Trihydro Co Project/Site: Ques	prporation ta Pipeline - Lead and Asbestos		TestAmerica Job ID: 280-100940-1
Lab Sample ID	Client Sample ID	Matrix	Collected Received
280-100940-54	BA483017	Solid	08/30/17 11:30 09/07/17 09:15
280-100940-55	BA583017	Solid	08/30/17 11:40 09/07/17 09:15
280-100940-56	BA683017	Solid	08/30/17 11:50 09/07/17 09:15
280-100940-57	L183017	Solid	08/30/17 09:40 09/07/17 09:15
280-100940-58	L283017	Solid	08/30/17 11:10 09/07/17 09:15
280-100940-59	BL183017	Solid	08/30/17 11:15 09/07/17 09:15
280-100940-60	BL283017	Solid	08/30/17 11:20 09/07/17 09:15
280-100940-61	BL383017	Solid	08/30/17 11:25 09/07/17 09:15
280-100940-62	BL483017	Solid	08/30/17 11:30 09/07/17 09:15
280-100940-63	BL583017	Solid	08/30/17 11:40 09/07/17 09:15
280-100940-64	BL683017	Solid	08/30/17 11:50 09/07/17 09:15
280-100940-65	INS183017	Solid	08/30/17 09:10 09/07/17 09:15
280-100940-66	INS283017	Solid	08/30/17 09:15 09/07/17 09:15
280-100940-67	VG183017	Solid	08/30/17 09:20 09/07/17 09:15
280-100940-68	VG283017	Solid	08/30/17 09:30 09/07/17 09:15
280-100940-69	VG383017	Solid	08/30/17 09:40 09/07/17 09:15
80-100940-70	PW183017	Solid	08/30/17 15:10 09/07/17 09:15
80-100940-71	PW283017	Solid	08/30/17 15:20 09/07/17 09:15
280-100940-72	PW383017	Solid	08/30/17 15:30 09/07/17 09:15
80-100940-73	PW483017	Solid	08/30/17 15:40 09/07/17 09:15

### **Client Sample Results**

Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Method:	6010C -	Metals	(ICP)

Client Sample ID: L182817 Date Collected: 08/28/17 13:15						Lab Sample ID: 280-100940-8 Matrix: Solid
Date Received: 09/07/17 09:15	Booult	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fac
Analyte Lead	540		0.77		mg/Kg	D         Prepared         Analyzed         Dil Fac           09/11/17 13:30         09/12/17 02:35         1
Client Sample ID: L282817 Date Collected: 08/28/17 13:54 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-9 Matrix: Solid
Analyte	Result	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fac
Lead	590		0.66	0.23	mg/Kg	09/11/17 13:30 09/12/17 02:37 1
Client Sample ID: L382817 Date Collected: 08/28/17 14:20 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-10 Matrix: Solid
Analyte		Qualifier	RL	MDL		Di Fac
Lead	590		0.75	0.26	mg/Kg	09/11/17 13:30 09/12/17 02:40 1
Client Sample ID: L482817 Date Collected: 08/28/17 14:40 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-11 Matrix: Solid
Analyte	Result	Qualifier	RL	MDL		D Prepared Analyzed Dil Fac
Lead	570		0.82	0.28	mg/Kg	<u> </u>
Client Sample ID: L582817 Date Collected: 08/28/17 14:50 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-12 Matrix: Solid
Analyte	Result	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fac
Lead	230		4.1	1.4	mg/Kg	<u> </u>
Client Sample ID: L682817 Date Collected: 08/28/17 15:35 Date Received: 09/07/17 09:15 Analyte	Result	Qualifier	RL	MDL	Unit	Lab Sample ID: 280-100940-13 Matrix: Solid D Prepared Analyzed Dil Fac
Lead	29		1.2		mg/Kg	$\frac{1}{09/11/17} \frac{1}{13:30} \frac{1}{09/13/17} \frac{1}{07:24} \frac{1}{2}$
Client Sample ID: L782817 Date Collected: 08/28/17 16:15 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-14 Matrix: Solid
Analyte		Qualifier	RL	MDL		D Prepared Analyzed Dil Fac
Lead	550		0.83	0.29	mg/Kg	<u> </u>
Client Sample ID: L182917 Date Collected: 08/29/17 08:35 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-33 Matrix: Solid
Analyte		Qualifier	RL	MDL		D Prepared Analyzed Dil Fac
Lead	670		0.73	0.25	mg/Kg	09/11/17 13:30 09/12/17 03:03 1
Client Sample ID: L282917 Date Collected: 08/29/17 09:10 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-34 Matrix: Solid
Analyte		Qualifier	RL		Unit	D Prepared Analyzed Dil Fac
Lead	500		0.87	0.30	mg/Kg	<u> </u>

### **Client Sample Results**

### Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Method: 6010C - Metals (ICP)

Client Sample ID: L382917 Date Collected: 08/29/17 09:45						Lab Sample ID: 280-100940-35 Matrix: Solid
Date Received: 09/07/17 09:15						
Analyte		Qualifier		MDL		D Prepared Analyzed Dil Fac
Lead	480		1.5	0.53	mg/Kg	09/11/17 13:30 09/13/17 07:44 2
Client Sample ID: L482917 Date Collected: 08/29/17 10:05 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-36 Matrix: Solid
Analyte	Result	Qualifier	RL		Unit	D Prepared Analyzed Dil Fac
Lead	450		0.73	0.25	mg/Kg	09/11/17 13:30 09/12/17 03:10 1
Client Sample ID: L582917 Date Collected: 08/29/17 10:25 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-37 Matrix: Solid
Analyte	Result	Qualifier	RL		Unit	D Prepared Analyzed Dil Fac
Lead	280		0.79	0.27	mg/Kg	09/11/17 13:30 09/12/17 03:12 1
Client Sample ID: L682917 Date Collected: 08/29/17 11:05 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-38 Matrix: Solid
Analyte		Qualifier	RL	MDL		D Prepared Analyzed Dil Fac
Lead	120		0.77	0.27	mg/Kg	09/11/17 13:30 09/12/17 03:15 1
Client Sample ID: L782917 Date Collected: 08/29/17 11:40 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-39 Matrix: Solid
Analyte	Result	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fac
Lead	810		4.3	1.5	mg/Kg	<u> </u>
Client Sample ID: L882917 Date Collected: 08/29/17 11:55 Date Received: 09/07/17 09:15 Analyte	Result	Qualifier	RL	MDL	Unit	Lab Sample ID: 280-100940-40 Matrix: Solid D Prepared Analyzed Dil Fac
Lead	32		0.86	0.30	mg/Kg	<u> </u>
Client Sample ID: L982917 Date Collected: 08/29/17 12:30 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-41 Matrix: Solid
Analyte		Qualifier		MDL		D Prepared Analyzed Dil Fac
Lead	430		0.78	0.27	mg/Kg	09/11/17 13:30 09/12/17 03:45 1
Client Sample ID: L1082917 Date Collected: 08/29/17 15:10 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-42 Matrix: Solid
Analyte		Qualifier	RL		Unit	D Prepared Analyzed Dil Fac
Lead	460		0.72	0.25	mg/Kg	09/11/17 13:30 09/12/17 03:48 1
Client Sample ID: L1182917 Date Collected: 08/29/17 16:40 Date Received: 09/07/17 09:15						Lab Sample ID: 280-100940-43 Matrix: Solid
Analyte		Qualifier	RL	MDL		D Prepared Analyzed Dil Fac
Lead	290		1.1	0.38	mg/Kg	09/11/17 13:30 09/12/17 03:50 1

### **Client Sample Results**

### Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Method: 6010C - Metals (ICP)

Client Sample ID: L183017 Date Collected: 08/30/17 09:40							Lab Samp	le ID: 280-100 Matrix	940-57 c: Solid
Date Received: 09/07/17 09:15									
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Lead	330		0.99	0.34	mg/Kg		09/11/17 13:30	09/12/17 03:53	1
Client Sample ID: L283017 Date Collected: 08/30/17 11:10							Lab Samp	le ID: 280-100 Matrix	940-58 c: Solid
Date Received: 09/07/17 09:15								Watily	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	380		5.0	1.7	mg/Kg		09/11/17 13:30	09/13/17 06:16	5
Client Sample ID: BL183017 Date Collected: 08/30/17 11:15 Date Received: 09/07/17 09:15							Lab Samp	le ID: 280-100 Matrix	940-59 c: Solid
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	390		9.3	3.2	mg/Kg		09/11/17 13:30	09/13/17 06:28	10
Client Sample ID: BL283017 Date Collected: 08/30/17 11:20 Date Received: 09/07/17 09:15							Lab Samp	le ID: 280-100 Matrix	940-60 c: Solid
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	340		8.3	2.9	mg/Kg		09/11/17 13:30	09/13/17 06:31	10
Client Sample ID: BL383017 Date Collected: 08/30/17 11:25 Date Received: 09/07/17 09:15							Lab Samp	le ID: 280-100 Matrix	940-61 c: Solid
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Lead	250		4.3	1.5	mg/Kg		09/11/17 13:30	09/13/17 06:33	5
Client Sample ID: BL483017 Date Collected: 08/30/17 11:30 Date Received: 09/07/17 09:15							Lab Samp	le ID: 280-100 Matrix	940-62 c: Solid
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	630		15	5.3	mg/Kg		09/11/17 13:30	09/13/17 08:09	20
Client Sample ID: BL583017 Date Collected: 08/30/17 11:40 Date Received: 09/07/17 09:15							Lab Samp	le ID: 280-100 Matrix	940-63 c: Solid
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	240		5.5		mg/Kg			09/13/17 06:38	5
Client Sample ID: BL683017 Date Collected: 08/30/17 11:50 Date Received: 09/07/17 09:15							Lab Samp	le ID: 280-100 Matrix	940-64 c: Solid
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Lead	5600		5.6	1.9	mg/Kg		09/11/17 13:30	09/13/17 06:46	5

### **QC** Association Summary

### Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

### Metals

### Prep Batch: 387083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-39	L782917	Total/NA	Solid	3050B	
280-100940-40	L882917	Total/NA	Solid	3050B	
280-100940-41	L982917	Total/NA	Solid	3050B	
280-100940-42	L1082917	Total/NA	Solid	3050B	
280-100940-43	L1182917	Total/NA	Solid	3050B	
280-100940-57	L183017	Total/NA	Solid	3050B	
280-100940-58	L283017	Total/NA	Solid	3050B	
280-100940-59	BL183017	Total/NA	Solid	3050B	
280-100940-60	BL283017	Total/NA	Solid	3050B	
280-100940-61	BL383017	Total/NA	Solid	3050B	
280-100940-62	BL483017	Total/NA	Solid	3050B	
280-100940-63	BL583017	Total/NA	Solid	3050B	
280-100940-64	BL683017	Total/NA	Solid	3050B	
MB 280-387083/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 280-387083/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 280-387083/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

### Prep Batch: 387084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-8	L182817	Total/NA	Solid	3050B	
280-100940-9	L282817	Total/NA	Solid	3050B	
280-100940-10	L382817	Total/NA	Solid	3050B	
280-100940-11	L482817	Total/NA	Solid	3050B	
280-100940-12	L582817	Total/NA	Solid	3050B	
280-100940-13	L682817	Total/NA	Solid	3050B	
280-100940-14	L782817	Total/NA	Solid	3050B	
280-100940-33	L182917	Total/NA	Solid	3050B	
280-100940-34	L282917	Total/NA	Solid	3050B	
280-100940-35	L382917	Total/NA	Solid	3050B	
280-100940-36	L482917	Total/NA	Solid	3050B	
280-100940-37	L582917	Total/NA	Solid	3050B	
280-100940-38	L682917	Total/NA	Solid	3050B	
MB 280-387084/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 280-387084/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 280-387084/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

### Analysis Batch: 387317

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
280-100940-8	L182817	Total/NA	Solid	6010C	387084
280-100940-9	L282817	Total/NA	Solid	6010C	387084
280-100940-10	L382817	Total/NA	Solid	6010C	387084
280-100940-11	L482817	Total/NA	Solid	6010C	387084
280-100940-14	L782817	Total/NA	Solid	6010C	387084
280-100940-33	L182917	Total/NA	Solid	6010C	387084
280-100940-34	L282917	Total/NA	Solid	6010C	387084
280-100940-36	L482917	Total/NA	Solid	6010C	387084
280-100940-37	L582917	Total/NA	Solid	6010C	387084
280-100940-38	L682917	Total/NA	Solid	6010C	387084
280-100940-40	L882917	Total/NA	Solid	6010C	387083
280-100940-41	L982917	Total/NA	Solid	6010C	387083
280-100940-42	L1082917	Total/NA	Solid	6010C	387083

TestAmerica Denver

### **QC** Association Summary

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Solid

Solid

Solid

Solid

Solid

Solid

Solid

Solid

### Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

**Client Sample ID** 

L1182917

L183017

Method Blank

Method Blank

Lab Control Sample

Lab Control Sample

Lab Control Sample Dup

Lab Control Sample Dup

Metals (Continued)

Lab Sample ID

280-100940-43

280-100940-57

MB 280-387083/1-A

MB 280-387084/1-A

LCS 280-387083/2-A

LCS 280-387084/2-A

LCSD 280-387083/3-A

LCSD 280-387084/3-A

Lab Sample ID

280-100940-12

280-100940-13

280-100940-35

280-100940-58

280-100940-59

280-100940-60

280-100940-61

280-100940-62

280-100940-63

280-100940-64

Analysis Batch: 387317 (Continued)

Method

6010C

6010C

6010C

6010C

6010C

6010C

6010C

6010C

5

Prep Batch

387083

387083

387083

387084

387083

387084

387083

387084

### 9

Analysis Batch: 387473 **Client Sample ID** Prep Type Matrix Method Prep Batch L582817 Total/NA Solid 6010C 387084 6010C L682817 Total/NA Solid 387084 L382917 Total/NA Solid 6010C 387084 L283017 Total/NA Solid 6010C 387083 Total/NA Solid 6010C 387083 BL183017 BL283017 Total/NA Solid 6010C 387083 BL383017 Total/NA Solid 6010C 387083 Total/NA Solid 387083 BL483017 6010C BL583017 Total/NA Solid 6010C 387083 387083 Total/NA Solid 6010C BL683017

### Analysis Batch: 387616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-39	L782917	Total/NA	Solid	6010C	387083

### **QC Sample Results**

### Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

10

Method: 6010C - Metals (IC	CP)													
Lab Sample ID: MB 280-387083 Matrix: Solid Analysis Batch: 387317									Cli	ent S		ole ID: M Prep Tyj Prep Ba	be: To	tal/NA
Analyte		MB Qualifier		RL	I	MDL U	nit		DF	Prepare	əd	Analyz	ed	Dil Fac
Lead	ND			0.90		0.31 n	ng/Kg		09/	11/17 1	3:30	09/12/17	03:33	1
Lab Sample ID: LCS 280-38708 Matrix: Solid Analysis Batch: 387317	33/2-A		Spike		LCS	LCS		Clie	nt Sa	mple		Lab Cor Prep Typ Prep Ba %Rec.	be: Tot	tal/NA
Analyte			Added		Result		ier l	Jnit	D	%Re	C.	Limits		
Lead			50.0		50.2			ng/Kg		10		86 - 110		
Lab Sample ID: LCSD 280-3870 Matrix: Solid Analysis Batch: 387317	083/3-A		0.1		1.005		Cli	ent Sa	imple	e ID: L		Control Prep Tyj Prep Ba	be: Tot	tal/NA 87083
Analyte			Spike Added		Result	LCSD	ior I	Jnit	D	%Re		%Rec. Limits	RPD	RPD Limit
Lead			50.0		50.4	Guam		ng/Kg		10		86 - 110		
Lab Sample ID: MB 280-387084 Matrix: Solid Analysis Batch: 387317		МВ							Cli	ent S		ole ID: M Prep Tyj Prep Ba	be: Tot	tal/NA
Analyte	Result	Qualifier		RL		MDL U				Prepare		Analyz		Dil Fac
Lead	ND			0.90		0.31 n	ng/Kg		09/	11/17 1	3:30	09/12/17	02:25	1
Lab Sample ID: LCS 280-38708 Matrix: Solid Analysis Batch: 387317	34/2-A							Clie	nt Sa	mple		Lab Cor Prep Tyj Prep Ba	be: To	tal/NA
			Spike		LCS	LCS						%Rec.		
Analyte			Added		Result	Qualif		Jnit	D			Limits		
Lead			50.0		50.7		n	ng/Kg		10	)1	86 - 110		
Lab Sample ID: LCSD 280-3870 Matrix: Solid Analysis Batch: 387317	084/3-A		Spike		LCSD	LCSD	Cli	ent Sa	imple	) ID: L		Control S Prep Tyj Prep Ba %Rec.	be: To	tal/NA
Analyte			Added		Result		ier l	Jnit	D	%Re	C	Limits	RPD	Limit
-													_	

Initial

Amount

1.165 g

Initial

Amount

1.371 g

Batch

Number

387084

387317

Batch

Number

387084

387317

Final

Amount

100 mL

Final

Amount

100 mL

Dil

1

Dil

1

Factor

Factor

Run

Run

Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

Batch

3050B

6010C

Batch

3050B

6010C

Method

Method

Client Sample ID: L182817

Date Collected: 08/28/17 13:15

Date Received: 09/07/17 09:15

Client Sample ID: L282817

Date Collected: 08/28/17 13:54

Date Received: 09/07/17 09:15

Client Sample ID: L382817

Date Collected: 08/28/17 14:20

Date Received: 09/07/17 09:15

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Batch

Туре

Prep

Analysis

Batch

Туре

Prep

Analysis

Lab Sample ID: 280-100940-8

Lab Sample ID: 280-100940-9

SEJ

Analyst

Prepared

or Analyzed

Prepared

or Analyzed

09/11/17 13:30

09/12/17 02:37 CML

09/11/17 13:30 SEJ 09/12/17 02:35 CML

### 2 3 4 5 6 7 8 9

Analyst Lab

TAL DEN

TAL DEN

Matrix: Solid

Matrix: Solid

Matrix: Solid

Matrix: Solid

Matrix: Solid

Lab TAL DEN

TAL DEN

### Lab Sample ID: 280-100940-10 Matrix: Solid

Lab Sample ID: 280-100940-11

Lab Sample ID: 280-100940-12

Lab Sample ID: 280-100940-13

olid

<b>[</b>	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.193 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 02:40	CML	TAL DEN

### Client Sample ID: L482817 Date Collected: 08/28/17 14:40 Date Received: 09/07/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analvzed	Analvst	Lab
Total/NA	Prep	- 3050B			1.101 g	100 mL	387084	09/11/17 13:30		TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 02:42	CML	TAL DEN

### Client Sample ID: L582817 Date Collected: 08/28/17 14:50 Date Received: 09/07/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.096 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387473	09/13/17 07:21	CRR	TAL DEN

### Client Sample ID: L682817 Date Collected: 08/28/17 15:35 Date Received: 09/07/17 09:15

	Batch	Batch	Dura	Dil	Initial	Final	Batch	Prepared	Amalunat	Lab
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.491 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		2			387473	09/13/17 07:24	CRR	TAL DEN

Initial

Amount

1.078 g

Initial

Amount

1.226 g

Dil

1

Dil

1

Factor

Factor

Run

Run

Batch

Method

3050B

6010C

Batch

3050B

6010C

Method

Client Sample ID: L782817

Date Collected: 08/28/17 16:15

Date Received: 09/07/17 09:15

Client Sample ID: L182917

Date Collected: 08/29/17 08:35

Date Received: 09/07/17 09:15

Client Sample ID: L282917

Date Collected: 08/29/17 09:10

Date Received: 09/07/17 09:15

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Batch

Type

Prep

Analysis

Batch

Туре

Prep

Analysis

Analyst

Analyst

SEJ

SEJ

Lab Sample ID: 280-100940-33

Lab Sample ID: 280-100940-14

Prepared

or Analyzed

09/11/17 13:30

Prepared

or Analyzed

09/11/17 13:30

09/12/17 03:03 CML

09/12/17 03:00 CML

Lab TAL DEN TAL DEN 11

Matrix: Solid

Lab

TAL DEN

TAL DEN

Matrix: Solid

Matrix: Solid

Matrix: Solid

### Lab Sample ID: 280-100940-34 Matrix: Solid

Lab Sample ID: 280-100940-35

Lab Sample ID: 280-100940-36

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.033 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:05	CML	TAL DEN

### Client Sample ID: L382917 Date Collected: 08/29/17 09:45 Date Received: 09/07/17 09:15

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.171 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		2			387473	09/13/17 07:44	CRR	TAL DEN

### Client Sample ID: L482917 Date Collected: 08/29/17 10:05 **Date Received**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.227 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:10	CML	TAL DEN

### **Client Samp Date Collected Date Received**

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.134 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:12	CML	TAL DEN

Final

Amount

100 mL

Final

Amount

100 mL

Batch

Number

387084

387317

Batch

Number

387084

387317

Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Prep	3050B			1.227 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Analysis	6010C		1			387317	09/12/17 03:10	CML	TAL DEN
ple ID: L5 d: 08/29/17 d: 09/07/17	10:25 09:15		Dil		Final		Sample ID		
d: 08/29/17 d: 09/07/17 Batch	10:25 09:15 Batch		Dil	Initial	Final	Batch	Prepared	Ma	atrix: Soli
d: 08/29/17 d: 09/07/17 Batch Type	10:25 09:15 Batch Method	Run	Dil Factor	Amount	Amount	Batch Number	Prepared or Analyzed	Ma	atrix: Sol
d: 08/29/17 d: 09/07/17 Batch	10:25 09:15 Batch	Run				Batch	Prepared	Ma	atrix: Soli

Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

Matrix: Solid

Matrix: Solid

Matrix: Solid

Matrix: Solid

Matrix: Solid

Matrix: Solid

Lab Sample ID: 280-100940-38

Lab Sample ID: 280-100940-39

Lab Sample ID: 280-100940-40

Lab Sample ID: 280-100940-41

Lab Sample ID: 280-100940-42

Lab Sample ID: 280-100940-43

### 2 3 4 5 6 7 8 9 10

Client Sample ID: L682917 Date Collected: 08/29/17 11:05

Date	Collected:	08/29/17 11:0	15
Date	<b>Received:</b>	09/07/17 09:1	15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.164 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:15	CML	TAL DEN

### Client Sample ID: L782917 Date Collected: 08/29/17 11:40 Date Received: 09/07/17 09:15

Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.049 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387616	09/13/17 14:37	CML	TAL DEN

### Client Sample ID: L882917 Date Collected: 08/29/17 11:55 Date Received: 09/07/17 09:15

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	·		1.044 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:43	CML	TAL DEN

### Client Sample ID: L982917 Date Collected: 08/29/17 12:30 Date Received: 09/07/17 09:15

Bron Tuno	Batch	Batch Mothod	Bun	Dil	Initial Amount	Final	Batch	Prepared	Analyst	Lab
Prep Type Total/NA	Type Prep	Method 3050B	Run	Factor	<b>Amount</b>	Amount 100 mL	Number 387083	or Analyzed	Analyst SEJ	TAL DEN
Total/NA	Analysis	6010C		1	g		387317	09/12/17 03:45		TAL DEN

### Client Sample ID: L1082917 Date Collected: 08/29/17 15:10

Date Received: 09/07/17 09:15

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.257 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:48	CML	TAL DEN

### Client Sample ID: L1182917 Date Collected: 08/29/17 16:40 Date Received: 09/07/17 09:15

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.825 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:50	CML	TAL DEN

Initial

Amount

0.905 g

Initial

Amount

0.901 g

Final

Amount

100 mL

Final

Amount

100 mL

Batch

Number

387083

387317

Batch

Number

387083

387473

Dil

1

Dil

5

Factor

Factor

Run

Run

Batch

Method

3050B

6010C

Batch

3050B

6010C

Method

Client Sample ID: L183017

Date Collected: 08/30/17 09:40

Date Received: 09/07/17 09:15

Client Sample ID: L283017

Date Collected: 08/30/17 11:10

Date Received: 09/07/17 09:15

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Batch

Type

Prep

Analysis

Batch

Туре

Prep

Client Sample ID: BL183017

Date Collected: 08/30/17 11:15

Date Received: 09/07/17 09:15

Analysis

Analyst

Analyst

SEJ

SEJ

Lab Sample ID: 280-100940-58

Lab Sample ID: 280-100940-57

Prepared

or Analyzed

09/11/17 13:30

Prepared

or Analyzed

09/11/17 13:30

09/13/17 06:16 CRR

09/12/17 03:53 CML

### Lab TAL DEN TAL DEN TAL DEN

Matrix: Solid

Lab

TAL DEN

TAL DEN

Matrix: Solid

Matrix: Solid

Matrix: Solid

Matrix: Solid

### Lab Sample ID: 280-100940-59 Matrix: Solid

Lab Sample ID: 280-100940-60

Lab Sample ID: 280-100940-61

Lab Sample ID: 280-100940-62

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.482 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		10			387473	09/13/17 06:28	CRR	TAL DEN

### Client Sample ID: BL283017 Date Collected: 08/30/17 11:20

Date Received: 09/07/17 09:15

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.541 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		10			387473	09/13/17 06:31	CRR	TAL DEN

### Client Sample ID: BL383017

Date Collected: 08/30/17 11:25 Date Received: 09/07/17 09:15

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.526 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387473	09/13/17 06:33	CRR	TAL DEN

### Client Sample ID: BL483017 Date Collected: 08/30/17 11:30 Date Received: 09/07/17 09:15

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.588 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		20			387473	09/13/17 08:09	CRR	TAL DEN

### Client: Trihydro Corporation Project/Site: Questa Pipeline - Lead and Asbestos

Lab Sample ID: 280-100940-63

Lab Sample ID: 280-100940-64

Matrix: Solid

Matrix: Solid

### 1 2 3 4 5 6 7 8 9 10 11 12 13

Client Sample ID: BL583017

Date Collected: 08/30/17 11:40 Date Received: 09/07/17 09:15

Γ		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Pr	ер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
To	otal/NA	Prep	3050B			0.814 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Тс	otal/NA	Analysis	6010C		5			387473	09/13/17 06:38	CRR	TAL DEN

### Client Sample ID: BL683017 Date Collected: 08/30/17 11:50 Date Received: 09/07/17 09:15

<b>[</b>	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.402 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387473	09/13/17 06:46	CRR	TAL DEN

### Laboratory References:

= EMLab P&K - Denver, 4955 Yarrow Street, Arvada, CO 80002

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100



Report for:

Donna Rydberg TestAmerica-Denver 4955 Yarrow Street Arvada, CO 80002

Regarding: Project: 280-100940-1; Questa Pipeline- Lead and Asbestos EML ID: 1790994

Approved by:

Approved Signatory Noah Lazarte Dates of Analysis: Asbestos PLM: 09-19-2017

Service SOPs: Asbestos PLM (EPA Methods 600/R-93/116 & 600/M4-82-020, SOP EM-AS-S-1267)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the items tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos 4955 Yarrow Street , Arvada, CO 80002 (800) 651-4802 Fax (623) 780-7695 www.emlab.com

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

	Total Samples Submitted:	47
	Total Samples Analyzed:	47
Total S	Samples with Layer Asbestos Content > 1%:	4
Location: 280-100940-1, A182817	Lab ID-Version	: 8373424
Sample Layers	Asbestos Content	
Gray Compound	ND	
Sample Composite Homogeneity:	Good	
Location: 280-100940-2, A282817 Sample Layers	Lab ID-Version: Asbestos Content	: 8373425
Brown Compound	ND	
Sample Composite Homogeneity:	Good	
Location: 280-100940-3, A382817	Lab ID-Version.	: 8373426
Sample Layers	Asbestos Content	
Brown Compound	ND	
Sample Composite Homogeneity:	Good	
Location: 280-100940-4, A482817	Lab ID-Version:	: 8373427

	•
Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

 $\ddagger$  A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

EMLab P&K, LLC

EMLab ID: 1790994, Page 2 of 13

Lab ID-Version 1: 8373428-1

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Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

### Location: 280-100940-5, A582817

Sample Layers	Asbestos Content
Red Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good
Location: 280-100940-6, A682817	Lab ID-Version‡: 8373429-1
Sample Lavers	Ashestos Content

Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity:	Good

### Location: 280-100940-7, A782817 Lab ID-Version 1: 8373430-1 Sample Layers **Asbestos Content** Brown Compound ND Sample Composite Homogeneity: Good

Location: 280-100940-15, INS182817	Lab ID-Version‡: 8373431-1
Sample Layers	Asbestos Content
Yellow Insulation	ND
Composite Non-Asbestos Content:	90% Glass Fibers
	7% Cellulose
Sample Composite Homogeneity:	Good

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Lab ID-Version 1: 8373434-1

Lab ID-Version 1: 8373435-1

4955 Yarrow Street , Arvada, CO 80002 (800) 651-4802 Fax (623) 780-7695 www.emlab.com

Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-16, INS282817

### Location: 280-100940-16, INS282817 Lab ID-Version‡: 8373432-1 Sample Layers Asbestos Content Yellow Insulation ND Composite Non-Asbestos Content: 95% Glass Fibers Sample Composite Homogeneity: Good Location: 280-100940-17, PL182817 Lab ID-Version‡: 8373433-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

### Location: 280-100940-18, G182817

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

### Location: 280-100940-19, G282817

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

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 $\ddagger$  A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-20, G382817 Lab ID-Version 1: 8373436-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good
Location: 280-100940-21, G482817	• •
Location: 280-100940-21, G482817 Sample Layers Brown Non-Fibrous Material	Lab ID-Version‡: 8373437- Asbestos Content ND

ocation: 280-100940-22, A182817	Lab ID-Version‡: 8373438
Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-23, A282817	Lab ID-Version‡: 8373439-1
Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

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 $\ddagger$  A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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### EMLab P&K

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Asbestos Content

Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

**Sample Layers** 

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-24, A382817 Lab ID-Version: 8373440-1

Gray Compound	ND
Sample Composite Homogeneity	Good
Location: 280-100940-25, A482817	Lab ID-Version‡: 8373441-
Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity	Good
Location: 280-100940-26, A582817	Lab ID-Version‡: 8373442-
Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity	r: Good

Location: 280-100940-27, A682817	Lab ID-Version‡: 8373443-1
Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity:	Good

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 $\ddagger$  A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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**Asbestos Content** 

ND

Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

**Sample Layers** 

Brown Compound

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-28, A782817 Lab ID-Version: 8373444-1

Sample Composite Homogeneity: Good

Gray Compound	ND
Sample Composite Homogeneity: Goo	1
Location: 280-100940-29, A882817	Lab ID-Version‡: 8373445-1
Sample Layers	Asbestos Content
Brown Compound	ND
Diowin Compound	
Sample Composite Homogeneity: Goo	1
*	
Sample Composite Homogeneity: Goo	
Sample Composite Homogeneity: Goo Location: 280-100940-30, A982817	Lab ID-Version‡: 8373446-1
Sample Composite Homogeneity: Goo Location: 280-100940-30, A982817 Sample Layers	Lab ID-Version‡: 8373446-1 Asbestos Content ND
Sample Composite Homogeneity:       Goo         Location: 280-100940-30, A982817       Gample Layers         Gray Compound       Gray Compound	Lab ID-Version‡: 8373446-1 Asbestos Content ND
Sample Composite Homogeneity:       Goo         Location: 280-100940-30, A982817       Gray Compound	Lab ID-Version‡: 8373446-1 Asbestos Content ND

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 $\ddagger$  A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-32, A1182817 Lab ID-Version: 8373448-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity: Good	
Location: 280-100940-44, G182917	Lab ID-Version‡: 8373449-1
Location: 280-100940-44, G182917 Sample Layers	Lab ID-Version‡: 8373449-1 Asbestos Content

Sample Composite Homogeneity: Good

Location: 280-100940-45, G282917	Lab ID-Version‡: 8373450-1
Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity	Good

Location: 280-100940-46, G382917	Lab ID-Version‡: 8373451-1
Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

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4955 Yarrow Street , Arvada, CO 80002 (800) 651-4802 Fax (623) 780-7695 www.emlab.com

**Asbestos Content** 

Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

**Sample Layers** 

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-47, G482917 Lab ID-Version‡: 8373452-1

Sample Composite Homogeneity: Good

Brown Non-Fibrous Material	ND
Sample Composite Homogenei	ty: Good
location: 280-100940-48, PL182917	Lab ID-Version‡: 8373453-1
Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogenei	ty: Good
Location: 280-100940-49, A183017 Sample Layers	
Location: 280-100940-49, A183017 Sample Layers Gray Compound	Lab ID-Version‡: 8373454-1 Asbestos Content ND
Sample Layers	Asbestos Content ND
Sample Layers Gray Compound	Asbestos Content ND ty: Good
Sample Layers Gray Compound Sample Composite Homogenei	ND

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**Asbestos Content** 

ND

Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Sample Layers

Brown/Black Non-Fibrous Material with Paint

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-51, BA183017 Lab ID-Version: 8373456-1

ocation: 280-100940-52, BA283017	Lab ID-Version‡: 8373457-
Sample Layers	Asbestos Content
Brown/Black Non-Fibrous Material with Paint	ND
Sample Composite Homogeneity: Good	
ocation: 280-100940-53, BA383017	Lab ID-Version‡: 8373458
Sample Layers	Asbestos Content
Brown/Black Non-Fibrous Material with Paint	ND
Sample Composite Homogeneity: Good	
agation, 280 100040 54 PA 482017	Lab ID-Version‡: 8373459-
ocation: 280-100940-54, BA483017	•
Sample Layers	Asbestos Content
Brown/Black Non-Fibrous Material with Paint	ND

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Lab ID-Version<sup>†</sup>: 8373462-1

Lab ID-Version 1: 8373463-1

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Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

### Location: 280-100940-55, BA583017 Lab ID-Version 1: 8373460-1

Sample Layers	Asbestos Content
Yellow Coating	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-56, BA683017	Lab ID-Version‡: 8373461-1
Sample Layers	Asbestos Content
Yellow Coating	ND
Sample Composite Homogeneity:	Good

### Location: 280-100940-65, INS183017

	· · ·
Sample Layers	Asbestos Content
Multicolored Insulation	ND
Composite Non-Asbestos Content:	95% Glass Fibers
Sample Composite Homogeneity:	Good

### Location: 280-100940-66, INS283017

Sample Layers	Asbestos Content
Yellow Insulation	ND
Composite Non-Asbestos Content:	95% Glass Fibers
Sample Composite Homogeneity:	Good

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Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-67, VG183017

Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Composite Non-Asbestos Content:	3% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 280-100940-68, VG283017	Lab ID-Version‡: 8373465-1
Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Composite Non-Asbestos Content:	3% Glass Fibers
Sample Composite Homogeneity:	Good

### Location: 280-100940-69, VG383017

Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Composite Non-Asbestos Content: 3% Glass Fibers	
Sample Composite Homogeneity:	Good

### Location: 280-100940-70, PW183017

Lab ID-Version 1: 8373467-1

Lab ID-Version 1: 8373466-1

Sample Layers	Asbestos Content
Gray Felt	40% Chrysotile
Black Tar	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Moderate

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EMLab P&K, LLC

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Client: TestAmerica-Denver C/O: Donna Rydberg Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Date of Sampling: 08-28-2017 Date of Receipt: 09-08-2017 Date of Report: 09-19-2017

### ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116 Location: 280-100940-71, PW283017

Lab ID-Version 1: 8373468-1

Sample Layers	Asbestos Content
Gray Felt	50% Chrysotile
Black Tar	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate
Location: 280-100940-72, PW383017	Lab ID-Version‡: 8373469-1
Sample Lavore	Ashestes Content

Sample Layers	Asbestos Content
Gray Felt	40% Chrysotile
Black Tar	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 280-100940-73, PW483017	Lab ID-Version‡: 8373470-1
Sample Layers	Asbestos Content
Gray Felt	50% Chrysotile
Black Tar	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

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# **TestAmerica Denver**

**Chain of Custody Record** 



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Gompony. EMLab P&K				-	Accestrations Required (See note): NELAP - Oregon	qured (Soo nok Ion	4.			22 1	Job #: 280-100940-1	
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### TestAmerica Denver

4955 Yarrow Street Arvada, ICO 80002

# Chain of Custody Record

### TestAmerica

Slate, Zp; CO, 80002 A182917 (280-100940-22) G482817 (280-100940-21) G182817 (280-100940-18) Arvada, CO 80002 Phone (303) 736-0100 Fax (303) 431-7171 Empty Kit Reunquiched by: A482917 (280-100940-25) A292917 (280-100940-23) 6392817 (280-100940-20) G282817 (280-1009-40-19) PL182817 (280-100940-17) Sample Identification - Client ID (Lab ID) ŝ EMLab P&K Shipping/Receiving Client Information (Sub Contract Lab) Rolineushed by Doliverable Requested: I, II, III, IV, Other (specify) Voxe: Signe Sobordary according to change, Yeadymerical Laboratories, Inc., paper the extensible of mathed, sociaditation compliance upon out subcontract laboratores. The sample onlymost is forwarded under shain-strainary does not surrantly maintain accordingion in the State of Origin advector provided parts of the angles, the samples and the state of Origin and T A382917 (280-100940-24) l Questa Pipeline - Lead and Asbestos cperry ternquahed by Possible Hazard Identification 1955 Yarrow Street fojoci, Noma: nconfirmod TRACTOR ent Conlact: Project #: 26017197 Sempler: 10. Finance: Date Three Date Time. Primary Deliverable Rank; 2 Sampio Doto Signation of the second P 2 2 2 TAT Required (days): 9/19/2017 8/29/17 8/28/17 8/25/17 8/29/17 8/28/17 8/26/17 8/29/17 8/26/17 8/26/17 Date Requested: Date: <u>-Movntain</u> 14:50 Mountain 09:45 Mountain 14:50 Nountsin पर्ह्ता जन्हराजिय Nouces 08:35 .Mauntain 16;40 16:40 16:40 01:60 1120750 Sampla Gegrab (C=comp. Sample Туро Company Company Told, Motrix Solid Solid Solid Solid Solid Solid Solid Solid Solid Leb PM: Rydberg, Donna R C-Mail; donna.rydberg@lestamericaine.com r wid rates of single free or this contains Accorditations Haculted (See note): NELAP - Oregon Certaine USAISD (Certor May SUB (Asbastos - PLM by EPA 500/R-93/115 (price p Sample Disposal ( A fee may be assessed if samples are retained longer than 1 menth) Return To Client Disposal By Lab Archive For Monte Special Instructions/QC Requirements: Refurn To Cilent Recolved by: Received by: × × × × × × × × × syer)y Astesios - PLM by EPA 600/R-93/116 (pric 178日第3日第3日第3日 001790994 Analysis Requested Colorado Carrier Tracking No(s): State of Origin Method of Shoment Delia 11/8/17 1900 Date Time Total Romber of could let 88 38 S (4) A - HCL B - Nach B - Nach F - Other: 280-411382.2 Preservation Codes 280-100840-1 Pago 2 dí 6 a a Special Instructions/Note: M - Hexane N - Netro O - Astro O - Astro O - Astro O - Astro P - Net CO S - Hos S - Ho Europary (here and Months Jes,

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**TestAmerica** Denver 4955 Yorrow Street





Chain of Custody Record

State, Zip: CO, 80002 Arvada, CO 80002 Phone (303) 735-0100 Fax (303) 431-7171 Phone: Shipping/Receiving Client Information (Sub Contract Lab) G182917 (280-100940-44) Sampio Identification - Client ID (Lab ID) Questa Pipeline - Lead and Asbestos Ï Sinds EMLAS P&K G282917 (280-100940-45) A1182917 (280-100940-32) A1082817 (280-100940-31) A982917 (280-400940-30) A892917 (280-100940-28) A782917 (280-100940-28) 955 Yarrow Street, odingoo. scie: Since laboraly secrediations are subject to change. Test/mente Laborations, int, places the extension of mathod, analyte & accreditation compliance upon out automatives. This sample showerd of tervardost under chain-disualidy. If the abdationy does not barronity maintain accreditation in the State of Origon barre transportations to being analyzed, the complice, must be apped back to the Test/America laboratory or other least-clipter, will be provided. Any change to extremible should be brought to Test/America laboratory or other least-clipter, will be provided. Any change to extremible should be brought to Test/America laboratories to the Least-Clipter, will be provided. Any change to extremible a brought to Test/America laboratory, the change to extremible and the should be brought to Test/America laboratory, the change the state of the should be and the state of the should be analyzed. The source of the state and the should be and the should be analyzed back to the Test/America laboratory or other least-clipter, will be provided. Any change to extend be brought to Test/America laboratory, the change that the should be analyzed. The advatter of the should be analyzed back to the should be analyzed been at the should be and the should be analyzed been at the should be advatter at the should be advatted by attending to said complicance to Test/Imerica. Inc. 4682917 (280-100940-27) INDEX NOTES Empty Kit Rolinguished by: Deliverable Requested: 1, 11, 11, 11, 1V, Other (specify) Possible Hazard Identification 6582917 (280-100940-26) ont Contect: tounguished by: winquisted by: hoomhaad 0vo Dato Roquestod: 9/19/2017 Phone 1710/001.M 280/17/187 WO (?) TAT Requested (days): Samolon 30.8 WMDSS UpperTires: Primory Deliverable Rank: 2 Sampla Data 8/29/17 8/28/17 8/29/17 8/29/17 8/29/17 8/29/17 8/29/17 8/29/17 8/29/17 The second Mountein 11:05 Mountain 11:40 Mosantein 11:55 Mountain 12:30 Uate: . Mountain 09:25 Mountain 16:40 02:60 **L**[07:60 <u>미야미에</u> 15:10 Sample Gegrab (С=сопр Т¥р Sampla Control ( 1998) Number of Contemporate Contomy Compony (ni-mater, Barrille, Matrix Solid Solid Solid PlloS Solid Squid Solid Solid Solid E-Mail: donne.rydborg@jtestamericeinc.com Rydberg, Donne R Leo HM: Field FRIAted Samola Fras Accreditations Required (See note); NELAP - Oregon I me: MS/MSID (Yes of h Special Instructions/OC Recuirements: Sample Disposal (A fee may be assessed if samples are rotained longer than 1 month) Return To Cilent Disposel By Lab Archive For Ident SUB (Asbestos - PLM by EPA 500R-99118 (price pe layer)) Asbestos - PLM by EPA 600R-99118 (price × × × × Hooghod by: VOCUMBO DV × × × × × Analysis Requested State of Origina Colorado Canter Tracking No(o): Malhad of Shipmerti Dale Fine: DaterTime C L1/2/ 48) ž Fold Hole P B-A-HCL B-A-HCL D-Niric Acid F-NauHSD4 F-NauHSD4 F-NauHSD4 H-Addroise Acid I-H2 K-CDTA 280-411382.3 8 Preservation Codes: 280-100940-1 Page 3 of 6 8 Special Instructional/Note: ģ N - Howard N - Nova O - Asvince O - No2043 P - No2043 P - No2007 R - No25200 S - H2504 S - H2504 S - H2504 V - Acche V - Acche V - Acche V - PH 4-5 Company En-lato Z - otho: (specify) Company Months 8

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TestAmerica Denver 4955 Yanow Steet Arrado, CO 80002

# **Chain of Custody Record**

**TestAmerica** 

Arvada, CO 80002				•						THE CODER IN B	THE CEADER IN DAVISONNELLINE TESTING
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	Phone:			donut E-Mai:	e-Mai: donno.rydberg@tostemoricei	stewericeinc.com	State of Origin; Colorado	-		Page 4 of 6	
Company EMLab P&K					Acceditations Required (See NELAP - Dregon	taquinad (See note); Igon				Jab #: 280-100940-1	
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Sample Identification - Client ID (Lab ID)	Sample Date	Time	G=grob) pronum, A-Ali							č.	Special Instructions/Note:
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Custody Seels Infact: Custody Seel No.; A Yes A No.	.**.		··.·:	· :	Coole	Coole: Temperature(s) *C and Other, Rematic:	Komanis;			··· ·	

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# TestAmerica Denver 4955 Yarrow Street Arvada, CO 60002

# **Chain of Custody Record**



Denore (2012) 725-0100 Fax (2012) AS4-7171										
	Sumpler			Lab Hys Rydber	Lab PAC Rvdberg, Donne R		Corrier Treaking No(s)	(c)DN [	COC No. 260-411382.5	
on (one contract rac)	Ρησια:			E-Mail:	vdoera@le	E-Mail: donna.rydberg@testomericainc.com	Sipla & Orgh: Colorado		Page 5 of 6	
Company. EMI-ab P&X				28	NELAP - Oragon	NELAP - Oragon			дар и: 280-100940-1	
r Street	Dua Dato Requestad: 9/19/2017	-				Analysis Requested	quested		A - HCL M	M-House
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	PO PC				2.931				G - AmeNor H - Ascerbic Add	S - H2SO4 7 - TSP Ocdecellydrane
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Project Name: Ouesta Pipeline - Load and Asbestas	۲ <sup>нојост א</sup> : 230177197	i		10110	iej de Gyler	+ 66062100	4 4		· · ·	ک - oiher (عتمالاً)
	RMORE:			5386	30) ( - PL 1					
					and Hist (Asbestos 1)' Asbeste					
Sample Ident/fication - Client ID (Lab (2)	Sample Date	<u> </u>	Gegrab) ar-ru							Special Instructions/Note:
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INS183017 (280-100940-65)	BUCOUNT	09:10 Mountein		S. S. E	×				25567	
INS283017 (220-100940-66)	8/30/17	09;15 Mountain		Solid	×		-			
VG183017 (280-100940-67)	EV30/17	09:20 Mountain		Solid	×					
VG283017 (280-100940-68)	8/30/17	09;30 Mountain		Solid	×				2000	
VGS83017 (280-700940-89)	8/30/17	09:40 Mountain		Solid	×		. <u>-</u>		3322	
PW183017 (280-100940-70)	8/30/17	15:10 Mountain		Solid	×					
PW/283017 (280-100940-71)	8/30/17	15:20 Mautain I		Solid	×					
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Fullinguishad Byr	Optor Time:		Сопролу	90AA	Rooniv	Received by	V	8/6 := WILLERON	QOP (11/8/	Concerns
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Palnaushed by:	Dalo, <sup>1</sup> ma		Company	עראַק	Hocalved by:	ed by:		Dexertimes		Company

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Coder Temperature(s) \*C and Other Remarker

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### TestAmerica Denver 4955 Yarrow Street Avvada, CO 80002

Chain of Custody Record



	 . <sup>.</sup>	Cooler Temparabure(a) "C and Oliter Remarks;					:. ·	Custody Seals Intact: Custody Seal No.2
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engor men 1 menuny For Months	ter may no assessor it samples are relation tonger than the Disposal By Lab Archive For	Roturn To Client Disposed by Lab	Rote					Chocky Land Construction
		teased ( A feet man be appended	Comple 1		.			Possible Hazent Identification
sin-of-custody. If the laboratory does not site should to brought to TeatAmerica	th privant is forwarded under char Any changes to accrediation so	n out subcantract laboratarias. This sample s arefory or other anstructions will be provided montes Laboratories. Inc.	h compliance upor • Teet/vnerka laby picance lo Test/u	rie & accreditation laped back to the ating to sold comp	of Clustedy alter	e avererable e izad, the sorra elemed Choin	orices, inc. pilacoo th ormotrix teering ornalis has duate, reducen the	Violit: State laboratory sociedlations are autique to thorps. TestAmetica toborabitive, and the average of a state of the
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			×	Salid	P	15:40 Mosuntaln	8/30/17	PW483017 (280-100940-73)
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Spacial instructions/Note:			FSCIELEGIO PARONE M SUB (ASSec Fayen)/ Ass	(Arrange, Arrange, Arrange, Ander	08 4		Sample Date	Sample Identification - Client (D (Lab ID)
			SMSD Ios - M	Matte	, ,			
Other:		-	Ê				SSDWR	Sto:
K - EDTA W - 5H 4-6 L - EDA Z - oliver (specify)			8 6() 7 19 4				Project #: 28017197	Project Name: Questa Pipeline - Lead and Asbeetos
		1100 F	EDU R		i		30 OM	Empil;
P - MOUH H - NBZSZQU G - Amelyon S - M2SO4 M - Ancorbie Acid T - TSP Pode-Short-Me	 		9711				# Orl	Phone:
τĔ			6 (pric 15 (pri					State, 2 p: CO, 80002
			े हैं ह			(ayeb)	TAT Requested (days);	C.ey: Arvada
ration Code	Pu	Analysis Requested				abad:	Duo Date Requested: 9/19/2017	Addrees: 4955 Yerrow Street,
Job //: 280-100940-1	28 28	Activativations Required (Soe new): NELAP - Oregon	Accreditions Requir					Company; EMLab P&K
רייז בער 19 מינים (19 מינים). אייז בער 19 מינים	-	E-Mell; donna.rydber@@testamericalne.com Colonado	ili; ha.rydborg@it	E-Mail; donna		•	Pitona	Civert Cervaci: Shipping/Receiving
COC No; 280-411382.6	Corrier Fracking No(a): CC	-	Cub MM: Rydberg, Donna R	Cab PM: Rydber			Sampion	Client Information (Sub Contract Lab)
					ľ			Phone (303) 736-0100 Pax (303) 431-7171

Client Information				2
	Sampler, KUPILIIK	Lab PM: Rydberg, Donna R	Carrier Tracking No(s):	COC No: 280-67249-22759.1
client Contact. Fony Kupilik	Phone: (367)フィジーフィフダ	E-Mail: donna.rydberg@testamericainc.com	com	Page: Page 1 of 1
ompany: Trihydro Corporation		An	Analysis Requested	Job #:
Adress: 1252 Commerce Drive	Due Date Requested:			Code
City Laramie	TAT Requested (days):			B - NaOH N - Nexane B - NaOH N - None C - Zn Acetate O - AsNaO2
state, Zip: WY, 82070	10 i>AY			
Phone:	Po #: Purchase Order Requested	11112		Acid
Email: Ikupilik@trihydro.com	1-252M0-1	(ON		I - Ice J - Di Water
Project Name: Questa Pipeline - Lead and Asbestos Site:	Project #: 28017197 SSOW#:	(Yes or		L - EDA L - EDA Other:
	Sample Type Sample (C=comp.	Matrix Matrix (rivensi, Seroli, Seroli, Ormandoli		o to hedmuN listc
Sample Identification	Sample Date Time G=grab)   8 Preservati	-		K Special Instructions/Note:
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A282017	1354	S X		
A382817	1420	x S		
A482617	1440	S X		
A582817	1510	X X		
A682817		X	780-100940 Chain of Custody	
A782817	ILOIS	XX		
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Identification			Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	retained longer than 1 month)
Other (specify)	11	-	C Requirements:	
Empty Kit Relinguished by:		Time: AA	A Method of Shipment.	
Reinquished by:	Date/Time; 9/16/17 @ 1500	Company Received W	Date(Time.	17 Og 15 Company
Reinquished by:		Company Received by	Date/Time.	Company
Reinquished by:	Date/Time.	Company Received by:	Date/Time;	Company
Custody Seals Intact: Custody Seal No.: A Yes A No		Cooler Temperature(s	coold Temperature(s) "C and Other Bamarks:	by 35 9/117

Arvada, CO 80002 Phone (303) 736-0100 Fax (303) 431-7171	Chain of Cus	of Custody Record		THE LEADER IN ENVIRONMENTAL TESTING
Client Information	Sampler:	Lab PM Rvdberg, Donna R	Carrier Tracking No(s);	COC No: 280-67249-22759.1
Clent Contact Tony Kupilik	LHL -3	E-Mait: donna.rydberg@testamericainc.com	1	Page: Page 1 of 1
Company: Trihydro Corporation		Analysis	Analysis Requested	Job#:
Address: 1252 Commerce Drive	Due Date Requested:			Cod
City: Latamie	TAT Requested (days):			B - NoCH M - Hexane B - NaOH N - None C - Zn Acetate O - AsNa02
State, Zip: WY, 82070	ID DAYS			D - Nitric Acid P - Na204S E - NaHSO4 Q - Na2SO3
Phone:	Po#: 17 - 252 WO Purchase Order Requested	1		F - MeOH R - Na2S203 G - Amchlor S - H2SO4 H - Ascorbic Acid T - T5P Dodecahydrate
Email: Jkupiilk@trihydro.com	11-252 WO-L	and the second second		I - Ice J - Di Water
Project Name: Questa Pipeline - Lead and Asbestos	37	and the second second second		K - EDA
site:	SSOW#:	N) asi		of Other:
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ant	Poison B Unknown     Rediological		y be assessed if samples are	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Return To Client X Disposal By Lab Archive For Months
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Reinquished by: Reinquished by:	Date/Time: Date/Time:	Company Received by: Company Received by:	Date/Time: Date/Time:	Company Company
Custody Seals Intact <sup>1</sup> Custody Seal No 1				

<b>TestAmerica Denver</b> 4955 Yarrow Street Arvada, CO 80002 Phone (303) 736-0100 Fax (303) 431-7171	Chain of Custody Record	tody Rec	ord	TestAmerica THE LEADER IN EWIRONMENTAL TESTING
	Sampier:	Lab PM:	Lab PM: Carrier Tracking No(s)	
Client Information	KUTLIK	Kydberg,	Donna K	5-15177-64710-0
Construction Contract. Tony Kupilik	1307)745-7474	donna.ry	donna.rydberg@testamericainc.com	Page 1 of 1
Company. Trihydro Corporation			Analysis Requested	JOD #:
Address: 1252 Commerce Drive	Due Date Requested:			00
City. Laramie	TAT Requested (days):			
State, Zip WY, 82070	10 047			D - Nitric Acid P - Na2O4S E - NaHSO4 D - Na2SO3 E - Man2SO703
Phone:	PO#:	(0		D
Email: Ikupilik@trihydro.com	1-252M0-1-	N 10 2	_	I - Ice J - DI Water K - FDTA
Project Name: Duesta Pipeline - Lead and Asbestos	Project #: 28017197	ple (Ye	-	L-EDA
Step.	SSUW#:	ms2 t	-	r of co
Cample Identification			12M molie	edmuN leto
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	Poison B Unknown	la la	Sample Disposal ( A fee may be assessed if san	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)
	11 11		C Requirem	
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Relinquished by:	Date/Time:	Company	Received by:	
Custody Seals Intact: Custody Seal No.: A Vac A No.			Cooler Temperature(s) <sup>a</sup> C and Other Remarks:	
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			0 1 2 3 4	2

Page 46 of 53

	Sampler: Rupicul V Prone:	Lab PM: Rydberg, Donna R	Carrie	Carrier Tranking No/el/	
ration ce Drive ) フィジー フィリイ Io.com	חר-שחר /			felou Ruyon	UUC NO:
ration ce Drive ) フィビテー フィリイ Io.com		E-Mail: donna.ryd	E-Mail: donna.rydberg@testamericainc.com		Page 1 of 1
ce Drive ) フィジー フィコイ			Analysis Requested	ted	Job #:
) フィジー フィーイ Io.com	Due Date Requested:				8
) דאקר ד-ארל ro.com	TAT Requested (days):				
) דאקר בכאר וס.com	10 247				D - Nitric Acid P - Na2045 E - NaHSO4 Q - Na2SO3 E - Macht P - Marceona
ro.com	PO #:	(0)	5		P
	MO#17252W0-L	- You 1000			1 - Ice J - Di Water K - FDTA
Guesta ripeline - Ledo and Aspesios	Project #: 28017197 SSOW#:	and the second second	L53		L - EDA Other:
	Sample	Matrix (Wrwakr, Sruold, Orwastold, Orwastold,	seis A		otal Number o
Sample Identification	Preservi	ation Code: X			- apecial IIIsuuctions/Note:
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A8 8 2917	1155		X		
A982917	1230		X		
A1082917			×		
A11 82517	V 1640 *	>	X		
Possible Hazard Identification	In B K Unknown Radiological		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Return To Client X Disposal By Lab Archive For Mon	ssed if samples are reta	ained longer than 1 month) rchive For Months
ested: I, II, III, IV, Other (specify)	11		Special Instructions/QC Requirements:		
Empty Kit Relinquished by:	L	Time	ne: // // //	Method of Shipment	
Reinquished by:	SaterTime. 9/6/17 (3) 1500	Company	Received by	Date/Time:	117 0910 Company
		Company	Received by:	Date/Time:	Company
Reinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Custody Seal No.: A Yes A No			Cooler Temperature(s) "C and Other Remarks:	3	

Page 47 of 53

I estAmerica Denver 4955 Yarrow Street Arvada, CO 80002 Phone (303) 736-0100 Fax (303) 431-7171	Chain of Custody Record		
Client Information	Sampler	Lab PM: Rydberg, Donna R	(s): COC No: S
Client Contact: Tony Kupilik	Prene: (301) フィジーフィフイ	E-Mail; donna.rydberg@testamericainc.com	Page 1 of 1
Company: Trihydro Corporation		Analysis Requested	:# QOP
Address: 1252 Commerce Drive	Due Date Requested:		8
city. Laramie	TAT Requested (days):		
State, Zlp: WY, 82070	10 DAY		
Phone:		(0)	C - MeDOT A - MACOT A - MACOTO C - Amotolor A - Ascorbior A - Ascorbior Acid T - TSP Dodecahydrate
Email: tkupilik@trihydro.com	17-252W0-L	and the local division in which the	I - Ice J - Di Water K - EDTA
Project Name. Ouesta Pipeline - Lead and Asbestos	Project #: 28017197 sscnuw-	Les or	
016-		meS be	
Sample Identification	Sample Mi Type (w (w) C=comp, ose Sample Date Time G=qrab) 81°118	Matrix (Woods, Filter & Secold Secold. Consector. Bir-Texa, Anda) File D	Total Number
	Preserva	X	
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L 28 2917	0210		
L382917	0945		
	1005		
L1828211	10257		
L 6 82917	10211		
L782917	0111		
L152821	-2511		
L1828P1	1230		
L 1 082 917	1510		
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ile Skin Irritant	Devison B Juhnown Radiological	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	nples are retained longer than 1 month) Months Months
ested: I, II, III, IV, Other (specify)	11 7	Special Instructions/QC Requirements:	
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Relinquished by: T. KUPILIK	Date Time. Company 9/16/17 (2) 1500	He Received H	Date Time 2/1/10 09/10 Company
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Reimquished by,	Date/Time: Company	pany Received by:	Date/Time: Company
Custody Seals Intact: Custody Seal No.: A Yes A No		Cooler Temperature(s) "C and Other Remarks.	
		9 1 1 1 1 1	22 33 44 5 77 8
			2 3 4 5 7

hone (303) 736-0100 Fax (303) 431-7171					THE LEADER IN ENVIRONMENTAL TESTING
client Information	Sampler. Kupilik	Lab PM: Rydberg	Lab PM: Rydberg, Donna R	Carrier Tracking No(s): COC	COC No. CO
Hent Contact: onty Kuphilik	1307) 745-7474	E-Mail: donna.r	E-Mail: donna.rydberg@testamericainc.com	Page	Page Page 1 of 1
ompany: rihydro Corporation			Analysis Rec	Requested	#
ddress: 252 Commerce Drive	Due Date Requested:			Pre	
ity. aramie	TAT Requested (days):				A - HCL M - HEXARE B - NaOH N - None C - Zn Acetate O - AsNaO2
tate, Zlp: VY , 82070	10 047				
hane:		(0		ĹĊĬ	
mail. kupilik@trihydro.com	WO# 17-252WO-L	s of N	(ON		1-Ice U-Acetone J-Di Water V-MCAA
roject Name: Questa Pipeline - Lead and Asbestos site:	Project#: 28017197 SSOW#:	9Y) 9Iqmi	D (Yes or		
	Sample	and the second se	BEIZA BEIZA	o tedmuk leto	
sample Identification	Sample Date Time G=grab)	ation Code:	_		special Instructions/Note:
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Possible Hazard Identification	Poison B KUnknown Radiological	ical	Sample Disposal ( A fee may be	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Mon	longer than 1 month) • For Months
ested: I, II, III, IV, O	LEVEL 11		Special Instructions/QC Requirements	ients:	
Empty Kit Relinquished by:	Date:	F	Time: 1 A	Method of Shipment:	
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Custody Seals Intact: Custody Seal No.:	-		Cooler Temperature(s) "C and Other Remarks:	Remarks:	

Page 49 of 53

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Client Information	KUPILIK	Lab PM: Rydberg, Donna R	Carrier Tracking No(s):	COC No:
cirent contact: Tony Kupitik	(301)フリジーフリア	E-Mail: donna.rydberg@testamericainc.com		Page 1 of 1
Company: Trihydro Corporation		Analysis Requested	luested	Job #:
Address: 1252 Commerce Drive	Due Date Requested:			
City: Laramie	TAT Requested (days):			
State, Zip: WY, 82070	10 047			
Phone:	PO#.	(0		G - Amchior S - H2SO4 H - Ascorbic Acid T - TSP Dodecah
Email: tkupilik@trihydro.com	-0N252-L1	(ON		
Project Name: Questa Pipeline - Lead and Asbestos Site	Project #; 28017197 sscow#:	(Xes of		L - EDA Other
	Sample Type	Matrix Matrix Matrix Manager M		i Mumber of o
Sample Identification		Per		문 Special Instructions/Note:
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Client Contact: Tony Kupilik	1307)745-7474	E-Mail: donna.rydberg@testamericainc.com	Page: Page 1 of 1
Company: Trihydro Corporation	Υ.	Analysis Requested	Job#
Address: 1252 Commerce Drive	Due Date Requested:		
cliy. Laramie	TAT Requested (days):		
State, Zip: WY, 82070	10 DAY		
Phone:		(0	F-MeCH K-NA25203 G-Amchlor S-H2SO4 H-Ascorbic Add T-15P Dodeshydrate
Email: tkupilik@trihydro.com	1-0N22-L1		1 - Ice U - Acetone J - Uniter U - Acetone U - critical U - Acetone
Project Name: Ouesta Pipeline - Lead and Asbestos Sue:	Project #; 28017197 ssconte:	Tes or	L-EDA
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Page 51 of 53

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Andreside         Andreside <t< th=""><th>Client Contact. Tony Kupilik</th><th></th><th>E-Mail: donna.rydberg@testamericainc.com</th><th>Page 1 of 1</th></t<>	Client Contact. Tony Kupilik		E-Mail: donna.rydberg@testamericainc.com	Page 1 of 1
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			Cooler Temperature(s) <sup>a</sup> C and Other Reme	rks:

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#### Client: Trihydro Corporation

#### Login Number: 100940 List Number: 1 Creator: True, Joshua A

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 280-100940-1

List Source: TestAmerica Denver

APPENDIX E

ARCADIS GROUNDWATER MONITORING MEMO



## MFMO



To. Cynthia Gulde, CEMC

Conies: File

From: Tim Cox Joe Gilbert

Date April 16, 2018 Arcadis Project No.: B0046795.0073

Subject:

Evaluation of Groundwater Monitoring at the Lower Dump Sump Chevron Mining, Inc. Questa, New Mexico

At the request of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. has prepared this technical memorandum that evaluates current and proposed future groundwater monitoring at the Chevron Mining Inc. (CMI) Lower Dump Sump (LDS). The LDS is in the southern portion of the Village of Questa, immediately south of the Red River (Figure 1). The LDS is scheduled to be decommissioned as part of the tailing pipeline removal. A small amount of tailing material remains in the LDS area, and CEMC proposes that the remnant tailing be left in place. Three alluvial groundwater monitoring wells (LS-1, LS-2, and LS-3) are located near the LDS and have been sampled since 1991. Private wells PR3, PR4, and PR5 and the Hunt's Pond well are also in the LDS area and were sampled in 2004 and 2005 during the Remedial Investigation. Constituent concentrations in samples from all wells have been and are currently below state and federal groundwater standards. Although the historical sample data indicate that the LDS and remnant tailing have not impacted groundwater quality, additional groundwater monitoring has been requested if the tailing are left in place.

Alluvial groundwater is present at approximately 6 feet below ground surface (bgs) at LS-3, increasing to approximately 40 feet bgs at LS-1 as the topography rises in elevation to the south. Groundwater elevations from October 2017 are shown on Figure 1, with interpreted groundwater elevation contours through the LDS area. The groundwater flow direction is east to west and is sub-parallel to the Red River. Based on this groundwater flow direction, monitoring well LS-3 is downgradient of the LDS structure, whereas LS-1 and LS-2 are upgradient. Because the wells are upgradient of the LDS and tailing to be left in place, LS-1 and LS-2 are proposed to be abandoned in accordance with the New Mexico Office of the State Engineer Rules and Regulations Governing Well Driller Licensing, Construction, Repair, and Plugging of Wells (19.27.4 New Mexico Administrative Code [NMAC]).

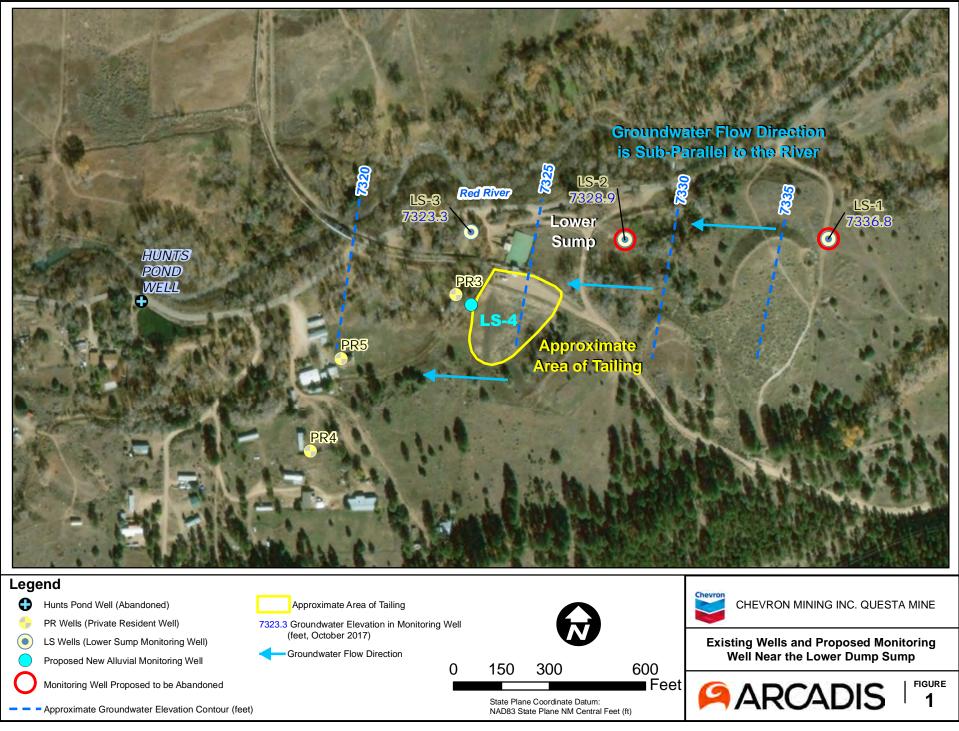
Arcadis U.S., Inc. 630 Plaza Drive Suite 100 **Highlands Ranch** Colorado 80129 Tel 720 344 3500 Fax 720 344 3535 Private wells PR3 and PR4 are downgradient of the area of tailing to be left in place. Sampling of these wells requires permission by the property owners. Therefore, a new monitoring well (LS-4) is proposed to be installed on CMI property at the northern boundary of the remnant tailing, which is shown on Figure 1. A monitoring well at this location would be downgradient of the tailing and would monitor potential impacts to groundwater. The new monitoring well would be approximately 25 feet deep with a screened interval from approximately 5 to 25 feet, thereby intersecting the water table. The well will be installed in accordance with the New Mexico Office of the State Engineer Rules and Regulations Governing Well Driller Licensing, Construction, Repair, and Plugging of Wells (19.27.4 NMAC).

The new monitoring well (LS-4) will be included in the Tailing Facility Performance Monitoring Plan and sampled at the same frequency and for the same constituents as LS-3. Existing monitoring wells LS-1 and LS-2 will be removed from the Tailing Facility Performance Monitoring Plan after they have been abandoned.

### **FIGURE**

Figure 1 Existing Wells and Proposed Monitoring Well Near the Lower Dump Sump

#### DRAFT



APPENDIX F

### **BORROW AREA INFORMATION**



Sampling Documentation Report CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY — QUESTA SPECIALTY PROJECT XQ006-18 Lower Dump Sump – Borrow Area Sampling Report QUESTA, NEW MEXICO

October 1, 2018

ENTACT.

nental and Geotechnical Construction Servi

Prepared for: **Cynthia Gulde, Ph.D.** Project Manager 3.5 Miles, Highway 38 Questa, NM 87556 Mobile: (832) 586-5984



## **TABLE OF CONTENTS**

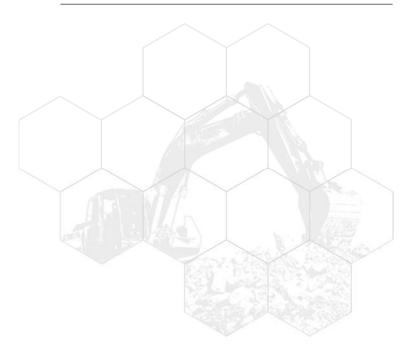
Section 1 s	ample Summary
-------------	---------------

- 2.1. Background
- 2.2. Sample Collection
- 2.3. Sample Survey
- 2.4. Sample Results

### Section 2 Photographs

- 2.1. Mill Basin Swale
- 2.2. Lower Dump Sump
- Appendices Appendix A: Sample Location Maps

Appendix B: Laboratory Analytical Reports





## **KEY TERMS**

### Acronyms

- **BGS:** Below Ground Surface
- LDS: Lower Dump Sump
- **MBS:** Mill Basin Swale



# **SECTION 1**

## **Project Summary**



## 2.1 Background

ENTACT was contracted to conduct composite soil sampling at locations that were anticipated to be used as borrow material to backfill excavations at the site. The areas identified as potential source material include:

- Mill Basin Stockpile
- Lower Dump Sump Berm & Borrow Areas

The scope of work included the collection of three representative soil samples from each of the areas.

## 2.2 Sample Collection

Prior to sample collection, the areas were cleared for utilities. At the Mill Basin stockpile, a hand shovel was utilized to remove the top 0-1 ft of soil to expose soil for sampling.

At the Lower Dump Sump, a 329 excavator was used to complete an excavation down to between 4 to 6 ft bgs. A bucket of material, representative of the soil encountered, was removed and placed to the side for sampling at each location, prior to backfilling the excavation.

Once the soil was excavated, a clean, metal hand trowel was used to scoop a representative sample of the soil into a 1-gallon plastic ziplock bag provided by the laboratory. The trowel was decontaminated between samples using Simple Green and distilled water.

The containers of soil were labeled and packaged into a cooler for transport. The samples were shipped via UPS to Energy Laboratories in Billings, Montana for analysis.

ENTACT

No.	Sample ID	Date	Time	Depth (ft)	Excavation Method	
		I	Vill Basir	n Swale		
1	MBS-01	9/4/18	11:50	1-2		
2	MBS-02	9/4/18	11:55	1-2	Hand Shovel	
3	MBS-03	9/4/18	12:00	1-2		
Lower Dump Sump						
1	LDS-TP-01	9/4/18	14:00	0-5.5		
2	LDS-TP-02	9/4/18	13:45	0-6	329 Excavator	
3	LDS-TP-03	9/4/18	13:30	0-4		

The table below summarizes the information for the samples.

The list of requested analyses is included in the table below.

Analyte	Method
Aluminum	E6010.20
Boron	E6010.20
Cadmium	E6010.20
Calcium, saturated paste	E6010.20
Calcium Carbonate	USDA23c
Conductivity, saturated paste	ASA10-3
Copper	E6010.20
Iron	E6010.20
Magnesium, saturated paste	E6010.20
Manganese	E6010.20
Molybdenum	E6010.20
Nitrate as N, KCL Extract	ASA33-8
pH, saturated paste	ASA10-3
Phosphorus, Olsen	ASA24-5
Potassium	E6010.20
Sodium Adsorption Ratio (SAR)	Calculation
Sodium, saturated paste	E6010.20
Sulphur	Sobek Modified
Total Organic Matter	Walkley-Black
Zinc	E6010.20
Moisture Content	D2974
Coarse Fragments	ASA15-3
Particle Size	ASA15-5

4



### 2.3 Sample Survey

Survey data was collected for each of the sample locations. For Lower Dump Sump, where excavations were conducted, survey points were collected for the surface and bottom of excavation elevations. The survey data for the soil sample locations can be found in the table below.

Survey Data Point ID	Northing	Easting	Elevation	Comments
Mill Basin Swale				
MBS-TP 01	22911.257	61871.174	8135.963	Stock Pile
MBS-TP 02	22966.62	61852.545	8138.72	Stock Pile
MBS-TP 03	22955.439	61814.45	8137.244	Stock Pile
Lower Dump Sump				
LDS-TP 01-SURF	22502.518	32972.035	7363.478	AUX PIT Surface
LDS-TP 01-EXC	22500.706	32970.457	7358.926	AUX PIT Excavation Depth
LDS-TP 02-SURF	22296.875	32899.257	7389.015	SITE 5 Surface
LDS-TP 02-EXC	22298.299	32898.315	7384.866	SITE 5 Excavation Depth
LDS-TP 03-SURF	22013.863	32546.618	7378.461	SITE 3 Surface
LDS-TP 03-EXC	22012.766	32547.888	7374.129	SITE 3 Excavation Depth

The survey data are presented on figures included in **Appendix A – Sample Location Maps**.



## 2.4 Sample Results

The analytical results were provided by the laboratory on September 20, 2018. One laboratory package was provided per area. The samples in the Lower Dump Sump set was qualified as "D" due to an increase in the reporting limit (RL) due to sample matrix interference. The RL on these samples was 0.2 mg/kg as compared to the 0.1 mg/kg RL on the Mill Basin Swale samples. In addition, the sample spike matrix for Molybdenum in both sets was qualified as "A" due to analyte levels greater than four times the spike level.

The laboratory analytical packages can be found in **Appendix B – Laboratory Analytical Results.** 



# **SECTION 2**

## Photographs



## 2.1 Mill Basin Swale



Figure 1 – MBS - 01 Location on the southeastern side of stockpile



Figure 2– MBS-02 Location on the northern side of stockpile

8



Questa Specialty Project –Borrow Area Sampling | Questa, New Mexico



Figure 3 – MBS-03 Location on the western side of stockpile



## 2.2 Lower Dump Sump



Figure 4 – LDS-TP-01 Location in the Auxiliary Borrow Area



Figure 5– LDS-TP-02 Location in the Site 5 Area

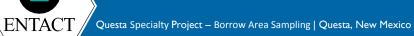




Figure 6 – View of LDS-TP-02 excavation



Figure 7 – LDS-TP-03 Location in the Site 3 Berm Area



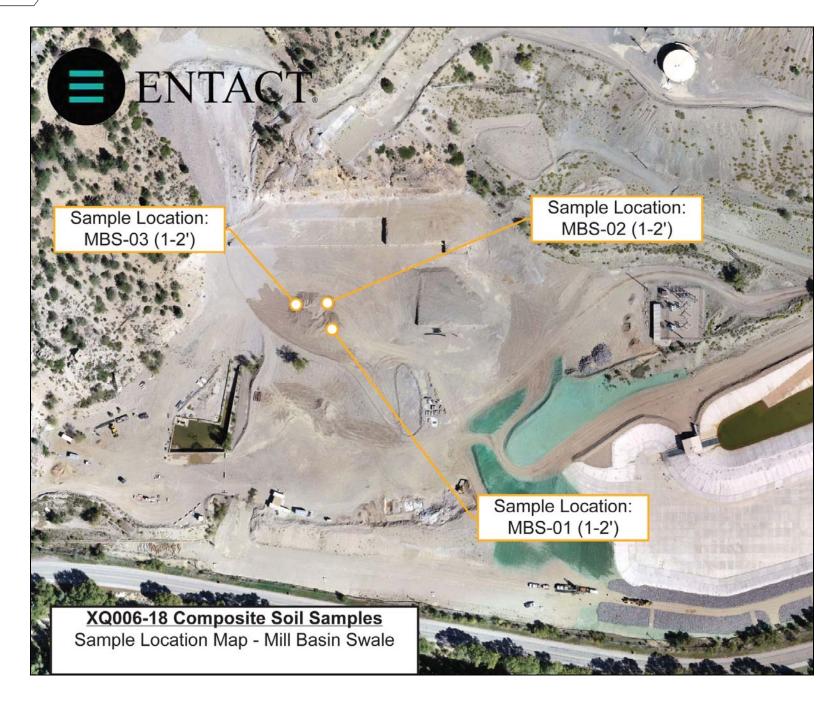
# **APPENDICES**



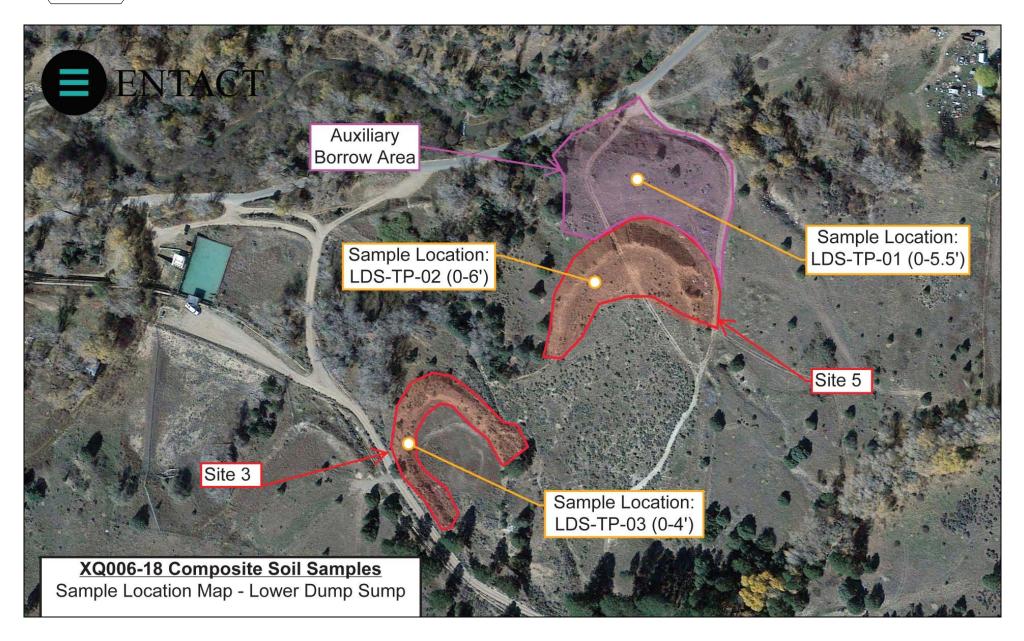
# **APPENDIX A**

## **Sample Location Maps**











## **APPENDIX B**

## **Laboratory Analytical Results**



### ANALYTICAL SUMMARY REPORT

September 20, 2018

Entact LLC 1 E Oakhill Dr Ste 102 Westmont, IL 60559-5540

Work Order: B18090552 Quote ID: B4681 - Chevron

Project Name: Mill Basin Swale Borrow Area

Energy Laboratories Inc Billings MT received the following 3 samples for Entact LLC on 9/7/2018 for analysis.

Lab ID	Client Sample ID	Collect Date Receive Date	Matrix	Test
B18090552-001	MBS-01	09/04/18 11:50 09/07/18	Soil	Metals, CACL2 Extractable DTPA Extractable Metals Metals, NH4OAC Extractable Metals, Ammonium Oxalate Extractable Metals, Saturated Paste Coarse Fragments Conductivity, Saturated Paste Extract Lime as CaCO3, % Moisture Nitrate as N, KCL Extract Organic Carbon/Matter Walkley- Black pH, Saturated Paste Phosphorus-Olsen CaCl2 Hot Water Soil Extraction ASA25-9 DTPA extraction for metals ASA19- 3.3 Ammonium Acetate Extraction ASA13-3 Ammonium Oxalate Soil Extraction ASA74-2 Saturated Paste Extraction ASA Particle Size Analysis / Texture Sodium Adsorption Ratio Saturation Percentage Sulfur Forms
B18090552-002	MBS-02	09/04/18 11:55 09/07/18	Soil	Same As Above
B18090552-003	MBS-03	09/04/18 12:00 09/07/18	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



#### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:	Entact LLC
Project:	Mill Basin Swale Borrow Area
Lab ID:	B18090552-001
Client Sample ID:	MBS-01

 Report Date:
 09/20/18

 Collection Date:
 09/04/18 11:50

 DateReceived:
 09/07/18

 Matrix:
 Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	6.9	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	42	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	68	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	23	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	9	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
pH, sat. paste		s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste		mmhos/cm	l	0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	24.3			0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste		meq/L		0.05		SW6010B	09/18/18 21:05 / rlh
Magnesium, sat. paste		meq/L		0.08		SW6010B	09/18/18 21:05 / rlh
Sodium, sat. paste		meq/L		0.04		SW6010B	09/18/18 21:05 / rlh
Sodium Adsorption Ratio (SAR)	2.48	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	0.24	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	1.9			0.2		ASA29-3	09/16/18 13:32 / srm
Lime as CaCO3	3.4	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen		mg/kg		1		ASA24-5	09/13/18 11:36 / srm
Nitrate as N, KCL Extract	ND	mg/kg		1		ASA33-8	09/17/18 11:40 / srm
METALS, AMMONIUM OXALATE EXTRA	CTABLE						
Molybdenum	110	mg/kg		1.0		SW6020	09/17/18 13:55 / by
CACL2 EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 21:52 / rjh
METALS, AMMONIUM ACETATE EXTRA	CTABLE						
Potassium	108	mg/kg		1		SW6010B	09/13/18 22:58 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	0.2	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh
Cadmium	0.1	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh
Copper	3.2	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh
Iron		mg/kg		1		SW6010B	09/17/18 16:58 / rlh
Manganese		mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh
Zinc	4.0	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



#### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:	Entact LLC
Project:	Mill Basin Swale Borrow Area
Lab ID:	B18090552-002
Client Sample ID:	MBS-02

 Report Date:
 09/20/18

 Collection Date:
 09/04/18 11:55

 DateReceived:
 09/07/18

 Matrix:
 Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	8.1	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	45	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	64	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	26	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	10	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
pH, sat. paste		s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste		mmhos/cm	1	0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	24.6			0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste		meq/L		0.05		SW6010B	09/18/18 21:12 / rlh
Magnesium, sat. paste		meq/L		0.08		SW6010B	09/18/18 21:12 / rlh
Sodium, sat. paste		meq/L		0.04		SW6010B	09/18/18 21:12 / rlh
Sodium Adsorption Ratio (SAR)	2.77	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	0.16	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	1.8			0.2		ASA29-3	09/16/18 13:32 / srm
Lime as CaCO3	3.2	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	11	mg/kg		1		ASA24-5	09/13/18 11:38 / srm
Nitrate as N, KCL Extract	5	mg/kg		1		ASA33-8	09/17/18 11:41 / srm
METALS, AMMONIUM OXALATE EXTRA	CTABLE						
Molybdenum	68	mg/kg		1.0		SW6020	09/17/18 14:06 / by
CACL2 EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 22:07 / rjh
METALS, AMMONIUM ACETATE EXTRA	CTABLE						
Potassium	107	mg/kg		1		SW6010B	09/13/18 23:06 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	ND	mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh
Cadmium		mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh
Copper		mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh
Iron	17	mg/kg		1		SW6010B	09/17/18 17:06 / rlh
Manganese	2.2	mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh
Zinc	3 1	mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



#### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:	Entact LLC
Project:	Mill Basin Swale Borrow Area
Lab ID:	B18090552-003
Client Sample ID:	MBS-03

 Report Date:
 09/20/18

 Collection Date:
 09/04/18 12:00

 DateReceived:
 09/07/18

 Matrix:
 Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	6.4	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	46	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	60	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	30	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	10	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
oH, sat. paste		s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste		mmhos/cm		0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	24.6			0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste		meq/L		0.05		SW6010B	09/18/18 21:20 / rlh
Magnesium, sat. paste		meq/L		0.08		SW6010B	09/18/18 21:20 / rlh
Sodium, sat. paste		meq/L		0.04		SW6010B	09/18/18 21:20 / rlh
Sodium Adsorption Ratio (SAR)	4.44	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	0.14	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Drganic Matter	1.9			0.2		ASA29-3	09/16/18 13:32 / srm
ime as CaCO3	3.3			0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen		mg/kg		1		ASA24-5	09/13/18 11:39 / srm
Nitrate as N, KCL Extract	9	mg/kg		1		ASA33-8	09/17/18 11:42 / srm
METALS, AMMONIUM OXALATE EXTRA	CTABLE						
Molybdenum	71	mg/kg		1.0		SW6020	09/17/18 14:09 / by
CACL2 EXTRACTABLE METALS							
Boron	0.1	mg/kg		0.1		SW6010B	09/13/18 22:15 / rjh
METALS, AMMONIUM ACETATE EXTRA	CTABLE						
Potassium	104	mg/kg		1		SW6010B	09/13/18 23:13 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum		mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh
Cadmium		mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh
Copper		mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh
ron		mg/kg		1		SW6010B	09/17/18 17:14 / rlh
Manganese		mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh
Zinc	3.2	mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



### **QA/QC Summary Report**

Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18 Work Order: B18090552

Analyte	Result Units	RL %REC Low Limit High Limit RPD RPDLimit Qu
Method: ASA10-3		Batch: 12
Lab ID:B18090552-001A DUPConductivity, sat. paste	Sample Duplicate 3.67 mmhos/cm	Run: MISC-SOIL_180918B         09/18/18           0.10         0.8         30
Lab ID:LCS-1809181716Conductivity, sat. paste	Laboratory Control Sample 4.07 mmhos/cm	Run: MISC-SOIL_180918B         09/18/18           0.10         99         70         130
Lab ID: B18090552-001A DUP pH, sat. paste	Sample Duplicate 7.50 s.u.	Run: MISC-SOIL_180918B         09/18/18           0.10         0.0         10
Lab ID: LCS-1809181716 pH, sat. paste	Laboratory Control Sample 7.10 s.u.	Run: MISC-SOIL_180918B         09/18/18           0.10         95         90         110



### **QA/QC Summary Report**

Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18 Work Order: B18090552

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	ASA15-5								Batch:	R307356
Lab ID:	B18090558-003A DUP	Sample Duplic	ate			Run: MISC	-SOIL_180914A		09/14	1/18 11:46
Sand		61.0	%	1.0				1.7	30	
Silt		26.0	%	1.0				7.4	30	
Clay		13.0	%	1.0				8.0	30	
Lab ID:	LCS-1809141146	Laboratory Co	ntrol Sample			Run: MISC	-SOIL_180914A		09/14	1/18 11:46
Sand		21.0	%	1.0	88	70	130			
Silt		58.0	%	1.0	107	70	130			
Clay		21.0	%	1.0	95	70	130			



### **QA/QC Summary Report**

Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18 Work Order: B18090552

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	ASA24-5						Batch:	OM_9-1	3-2018_11-1	19-16AMA
<b>Lab ID:</b> Phosphorus	LCS Olsen	Laboratory Co 48	ontrol Sample mg/kg	1.0	108	Run: FIA20 70	05-В_180913А 130		09/13	8/18 11:20
<b>Lab ID:</b> Phosphorus	<b>B18090560-002ADUP</b> Olsen	Sample Dupli 4.8	cate mg/kg	1.0		Run: FIA20	05-B_180913A	7.1	09/13 30	8/18 11:53
<b>Lab ID:</b> Phosphorus	<b>B18090560-002AMS</b> Olsen	Sample Matrix 17	k Spike mg/kg	1.0	117	Run: FIA20 70	05-В_180913А 130		09/13	8/18 11:55



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Analyte	Result Units	RL %REC Low Limit High Limit RPD RPDL	imit Qual
Method: ASA29-3		E	Batch: R307406
Lab ID: B18090552-001A DUP Organic Matter	Sample Duplicate 1.87 %	Run: MISC-SOIL_180916A 0.17 0.9	09/16/18 13:32 30
Lab ID: LCS-1809161332 Organic Matter	Laboratory Control Sample 4.58 %	Run: MISC-SOIL_180916A 0.17 117 70 130	09/16/18 13:32



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Analyte	Result Units	RL %REC Low Limit High Limit RPD	RPDLimit Qual
Method: ASA33-8		Batch: OM_9-	17-2018_11-28-59AM
Lab ID: LCS	Laboratory Control Sample	Run: FIA205-B_180917A	09/17/18 11:30
Nitrate as N, KCL Extract	10.8 mg/kg	1.0 100 70 130	
Lab ID:B18090560-003ADUPNitrate as N, KCL Extract	Sample Duplicate	Run: FIA205-B_180917A	09/17/18 11:50
	0.655 mg/kg	1.0	30
Lab ID: B18090560-003AMS	Sample Matrix Spike	Run: FIA205-B_180917A	09/17/18 11:51
Nitrate as N, KCL Extract	5.30 mg/kg	1.0 84 70 130	



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Analyte	Result Units	RL %RE	EC Low Limit High Limit	RPD RPDLimit Qual
Method: Calculation				Batch: R307623
Lab ID:B18090552-001A DUPSodium Adsorption Ratio (SAR)	Sample Duplicate 2.53 unitless	0.010	Run: MISC-SOIL_180919A	09/19/18 14:42 2.0 30
Lab ID: LCS-1809191442 Sodium Adsorption Ratio (SAR)	Laboratory Control Sample 8.44 unitless	0.010	Run: MISC-SOIL_180919A 90 70 130	09/19/18 14:42



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Analyte	Result Units	RL	%REC Low Limit High Limit RPD RPDLimit Qual
Method: Sobek Modified			Batch: R307623
Lab ID: B18090552-001ADUP Sulfur, Total	Sample Duplicate 0.220 %	0.010	Run: MISC-SOIL_180919A 09/19/18 12:54 6.6 50
Lab ID: LCS-R307623 Sulfur, Total	Laboratory Control Sample 0.220 %	0.010	Run: MISC-SOIL_180919A09/19/18 13:0310550150



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18 Work Order: B18090552

Analyte		Result	Units	RL	%REC	Low Limit H	igh Limit	RPD	RPDLimit	Qual
Method:	SW6010B								Batc	h: 125412
Lab ID: Boron	LCS-125412	Laboratory Co 0.420	ontrol Sample mg/kg	0.10	117	Run: ICP203- 70	B_180913A 130		09/13	3/18 21:48
<b>Lab ID:</b> Boron	B18090552-001ADUP	Sample Dupli 0.0738	cate mg/kg	0.10		Run: ICP203-	B_180913A		09/13 30	3/18 21:50
<b>Lab ID:</b> Boron	B18090552-002AMS2	Sample Matri 9.72	x Spike mg/kg	0.10	96	Run: ICP203- 70	B_180913A 130		09/13	3/18 22:1
Method:	SW6010B								Batc	h: 125413
<b>Lab ID:</b> Potassium	LCS-125413	Laboratory Co 400	ontrol Sample mg/kg	1.4	104	Run: ICP203- 70	B_180913A 130		09/13	3/18 22:54
<b>Lab ID:</b> Potassium	B18090552-001ADUP	Sample Dupli 102	cate mg/kg	1.4		Run: ICP203-	B_180913A	6.1	09/13 30	3/18 23:02
<b>Lab ID:</b> Potassium	B18090552-002AMS2	Sample Matri 4540	x Spike mg/kg	1.5	89	Run: ICP203- 70	B_180913A 130		09/13	3/18 23:10
Method:	SW6010B								Batc	h: 12548
Lab ID:	LCS-125485	Laboratory Co		0.40	400	Run: ICP203-			09/17	7/18 16:29
Cadmium Copper Iron Manganese		0.103 2.86 11.0 8.13	mg/kg mg/kg mg/kg mg/kg	0.10 0.10 1.0 0.10	103 86 71 87	70 70 70 70	130 130 130 130			
Zinc <b>Lab ID:</b> Aluminum	B18090691-001AMS2	3.46 Sample Matri 8.19	mg/kg x Spike mg/kg	0.10	82	70 Run: ICP203- 50	130 B_180917A 150		09/17	7/18 16:4
Lab ID: Aluminum Cadmium Copper Iron Manganese Zinc	B18090552-001A DUP	Sample Dupli ND 0.105 3.28 14.6 2.67 3.93		0.10 0.10 0.10 1.0 0.10 0.10		Run: ICP203-		3.8 1.4 2.8 4.1 1.6	09/17 30 30 30 30 30 30 30	7/18 17:02
Lab ID: Cadmium Copper Iron Manganese Zinc	B18090552-002AMS2	Sample Matri 0.781 4.50 24.5 9.80 4.62	x Spike mg/kg mg/kg mg/kg mg/kg mg/kg	0.10 0.10 1.0 0.10 0.10	71 90 76 76 74	Run: ICP203- 50 50 50 50 50 50	B_180917A 150 150 150 150 150 150		09/17	7/18 17:10

Qualifiers:

RL - Analyte reporting limit.



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Analyte	Result Uni	ts RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B							Batch	h: 125587
Lab ID: LCS-125587	Laboratory Control S	Sample		Run: ICP20	04-B_180918A		09/18	/18 21:01
Calcium, sat. paste	14.2 meq	/L 0.050	122	70	130			
Magnesium, sat. paste	8.16 meq	/L 0.082	112	70	130			
Sodium, sat. paste	28.2 meq	/L 0.043	97	70	130			
Lab ID: B18090552-001A DUP	Sample Duplicate			Run: ICP20	04-B_180918A		09/18	/18 21:08
Calcium, sat. paste	33.8 meq	/L 0.050				1.2	30	
Magnesium, sat. paste	4.27 meq	/L 0.082				0.8	30	
Sodium, sat. paste	11.1 meq	/L 0.043				1.5	30	
Lab ID: B18090552-002AMS2	Sample Matrix Spike	e		Run: ICP20	04-B_180918A		09/18	/18 21:16
Calcium, sat. paste	44.0 meq	/L 0.050	82	70	130			
Magnesium, sat. paste	24.0 meq	/L 0.082	96	70	130			
Sodium, sat. paste	22.1 meq	/L 0.043	92	70	130			



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18 Work Order: B18090552

Analyte		Result Units	RL S	%REC Low Limit High Limit RPD	RPDLimit Qual
Method:	SW6020				Batch: 125484
<b>Lab ID:</b> Molybdenu	<b>LCS-125484</b> m	Laboratory Control Sample 4.1 mg/kg	1.0	Run: ICPMS202-B_180917A 83 30 130	09/17/18 13:50
Lab ID: Molybdenu	<b>B18090552-001AMS</b>	Sample Matrix Spike 11 mg/kg	1.0	Run: ICPMS202-B_180917A 70 130	09/17/18 13:58 A
<b>Lab ID:</b> Molybdenu	B18090552-001A DUP m	Sample Duplicate 100 mg/kg	1.0	Run: ICPMS202-B_180917A 5.3	09/17/18 14:03 30

RL - Analyte reporting limit.



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	USDA23c								Batch:	R307636
<b>Lab ID:</b> Lime as Ca	B18090552-001A DUP aCO3	Sample Duplica 3.20	ate %	0.10		Run: MISC	-SOIL_180919B	6.1	09/19 30	/18 16:38
<b>Lab ID:</b> Lime as Ca	LCS-1809191638 aCO3	Laboratory Cor 12.0	ntrol Sample %	0.10	112	Run: MISC 70	-SOIL_180919B 130		09/19	/18 16:38



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Mill Basin Swale Borrow Area

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	USDA27a								Batch:	R307623
Lab ID: Saturation	B18090552-001A DUP	Sample Duplica 24.0	ate %	0.10		Run: MISC	-SOIL_180919A	1.2	09/19 30	)/18 14:42
Lab ID: Saturation	LCS-1809191442	Laboratory Cor 37.5	ntrol Sample %	0.10	99	Run: MISC 70	-SOIL_180919A 130		09/19	)/18 14:42



# Work Order Receipt Checklist

### Entact LLC

B180	90	552
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Login completed by:	Tabitha Edwards		Date	Received: 9/7/2018		
Reviewed by:	BL2000\raschim	Received by: bgs				
Reviewed Date:	9/17/2018		Car	rier name: Return-UPS NDA		
Shipping container/cooler in	good condition?	Yes 🗸	No 🗌	Not Present		
Custody seals intact on all s	hipping container(s)/cooler(s)?	Yes 🗹	No 🗌	Not Present		
Custody seals intact on all s	ample bottles?	Yes	No 🗌	Not Present 🗹		
Chain of custody present?		Yes 🗹	No 🗌			
Chain of custody signed who	en relinquished and received?	Yes 🗹	No 🗌			
Chain of custody agrees with	h sample labels?	Yes 🗹	No 🗌			
Samples in proper container	/bottle?	Yes 🗹	No 🗌			
Sample containers intact?		Yes	No 🗹			
Sufficient sample volume for	r indicated test?	Yes 🗹	No 🗌			
All samples received within I (Exclude analyses that are c such as pH, DO, Res CI, Su	onsidered field parameters	Yes 🗸	No 🗌			
Temp Blank received in all s	hipping container(s)/cooler(s)?	Yes	No 🗹	Not Applicable		
Container/Temp Blank temp	erature:	°C No Ice				
Water - VOA vials have zero	headspace?	Yes	No 🗌	No VOA vials submitted		
Water - pH acceptable upon	receipt?	Yes	No 🗌	Not Applicable		

### **Standard Reporting Procedures:**

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

### **Contact and Corrective Action Comments:**

The temperature of the sample(s) for shipping container 1 was 20.6°C, shipping container 2 was 20.8°C and shipping container 3 was 17.6°C.

The sample container for MBS-02 was received torn. Placed sample container into another ziploc and proceeded with analysis per phone call with Sarah Miller.

Turnaround time changed to 10 days per Shari Endy, Energy Laboratories Project Manager.

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Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

Irust our People. Irust our Data.	www.energylab.com	Page 1 of /
Account Information (Billing information)	Report Information (if different than Account Information)	Comments
Company/Name Entact	CompanyiName	TET 7 his not - and
contact Sorah Miller	Contact	Ind at show will
Phone	Phone	
Mailing Address 1 E Oak Hill Dr. S., to 102	Mailing Address	
City, State, ZIP Nustmont, 12 60559	City, State, Zip	
Email Smiller @ entact.com	Email	Ţ
_	Receive Report DHard Copy DEmail	
Purchase Order Quote Bottle Order 180020-18-503 BHSH madified RLOULOUL	Special Report/Formats:	
Project Information	Matrix Codes Analysis Reguested	
Project Name, PWSID, Permit, etc. M. 1/ BERIG Sugly BANNY Arra		All turnaround times are
	S. Solis/ Solids	RUSH.
	V - Vegetation B - Bioassay	
MINING CLIENTS, please indicate sample type. *If ore has been processed or refined, call before sending. T Burnduirt 11 (a)? maked in T 11 Increased and include a refined.	O - Other DW - Drinking	C RUSH sample submittal for charges and scheduling – See Instructions Page
Sample Identification	Number of Matrix Containers (See Codes	
9/4/18 1150		
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IT ANAL MILL DateTime 21	7 IVA Received by (print) 1,155 12598 31387	Dated The Signature
be signed Reinfulsified by (print)	Kodelved by Laboratory (print)	0956 Signature & mon of
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Page 18 of 19

ELI-COC-12/16 v.1

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

Analyte	Method
Aluminum	E6010.20
Boron	E6010.20
Cadmium	E6010.20
Calcium, saturated paste	E6010.20
Calcium Carbonate	USDA23c
Conductivity, saturated paste	ASA10-3
Copper	E6010.20
Iron	E6010.20
Magnesium, saturated paste	E6010.20
Manganese	E6010.20
Molybdenum	E6010.20
Nitrate as N, KCL Extract	ASA33-8
pH, saturated paste	ASA10-3
Phosphorus, Olsen	ASA24-5
Potassium	E6010.20
Sodium Adsorption Ratio (SAR)	Calculation
Sodium, saturated paste	E6010.20
Sulphur	Sobek Modified
Total Organic Matter	Walkley-Black
Zinc	E6010.20
Moisture Content	D2974
Coarse Fragments	ASA15-3
Particle Size	ASA15-5

Requested Analyses for Borrow Area Soil Samples submitted by ENTACT



### ANALYTICAL SUMMARY REPORT

September 20, 2018

Entact LLC 1 E Oakhill Dr Ste 102 Westmont, IL 60559-5540

Work Order: B18090560 Quote ID: B4681 - Chevron

Project Name: Lower Dump Sump Borrow Area

Energy Laboratories Inc Billings MT received the following 3 samples for Entact LLC on 9/7/2018 for analysis.

Lab ID	Client Sample ID	Collect Date Receive Date	Matrix	Test
B18090560-001	LDS-TP-03	09/04/18 13:30 09/07/18	Soil	Metals, CACL2 Extractable DTPA Extractable Metals Metals, NH4OAC Extractable Metals, Ammonium Oxalate Extractable Metals, Saturated Paste Coarse Fragments Conductivity, Saturated Paste Extract Lime as CaCO3, % Moisture Nitrate as N, KCL Extract Organic Carbon/Matter Walkley- Black pH, Saturated Paste Phosphorus-Olsen CaCl2 Hot Water Soil Extraction ASA25-9 DTPA extraction for metals ASA19- 3.3 Ammonium Acetate Extraction ASA13-3 Ammonium Oxalate Soil Extraction ASA74-2 Saturated Paste Extraction ASA Particle Size Analysis / Texture Sodium Adsorption Ratio Saturation Percentage Sulfur Forms
B18090560-002	LDS-TP-02	09/04/18 13:45 09/07/18	Soil	Same As Above
B18090560-003	LDS-TP-01	09/04/18 14:00 09/07/18	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:	Entact LLC
Project:	Lower Dump Sump Borrow Area
Lab ID:	B18090560-001
Client Sample ID:	LDS-TP-03

 Report Date:
 09/20/18

 Collection Date:
 09/04/18 13:30

 DateReceived:
 09/07/18

 Matrix:
 Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	10.5	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	24	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	66	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	25	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	9	%		1		ASA15-5	09/14/18 11:46 / srm
Fexture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
H, sat. paste		s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste	0.4	mmhos/cm	I	0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	19.5	%		0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste	2.36	meq/L		0.05		SW6010B	09/18/18 21:43 / rlh
/lagnesium, sat. paste	0.81	meq/L		0.08		SW6010B	09/18/18 21:43 / rlh
Sodium, sat. paste	0.49	meq/L		0.04		SW6010B	09/18/18 21:43 / rlh
odium Adsorption Ratio (SAR)	0.39	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	ND	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Drganic Matter	1.4	%		0.2		ASA29-3	09/16/18 13:32 / srm
ime as CaCO3	1.1	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	5	mg/kg		1		ASA24-5	09/13/18 11:50 / srm
Nitrate as N, KCL Extract	ND	mg/kg		1		ASA33-8	09/17/18 11:45 / srm
IETALS, AMMONIUM OXALATE EXTRA	CTABLE						
Nolybdenum	1.3	mg/kg		1.0		SW6020	09/17/18 14:31 / by
CACL2 EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 22:30 / rjh
IETALS, AMMONIUM ACETATE EXTRA	CTABLE						
Potassium	72	mg/kg		1		SW6010B	09/13/18 23:29 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	0.1	mg/kg		0.1		SW6010B	09/17/18 17:38 / rlh
Cadmium	ND	mg/kg		0.1		SW6010B	09/17/18 17:38 / rlh
Copper	0.3	mg/kg		0.1		SW6010B	09/17/18 17:38 / rlh
ron	4	mg/kg		1		SW6010B	09/17/18 17:38 / rlh
langanese		mg/kg		0.1		SW6010B	09/17/18 17:38 / rlh
Zinc	1.0	mg/kg	D	0.2		SW6010B	09/17/18 17:38 / rlh

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

QCL - Quality control limit.

D - RL increased due to sample matrix.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:	Entact LLC
Project:	Lower Dump Sump Borrow Area
Lab ID:	B18090560-002
Client Sample ID:	LDS-TP-02

 Report Date:
 09/20/18

 Collection Date:
 09/04/18 13:45

 DateReceived:
 09/07/18

 Matrix:
 Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	9.1	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	31	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	66	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	22	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	12	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
oH, sat. paste		s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste		mmhos/cm		0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	23.5			0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste	28.5	meq/L		0.05		SW6010B	09/18/18 21:47 / rlh
Magnesium, sat. paste		meq/L		0.08		SW6010B	09/18/18 21:47 / rlh
Sodium, sat. paste		meq/L		0.04		SW6010B	09/18/18 21:47 / rlh
Sodium Adsorption Ratio (SAR)	0.22	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	0.10	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	0.7	%		0.2		ASA29-3	09/16/18 13:32 / srm
ime as CaCO3	1.1	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	5	mg/kg		1		ASA24-5	09/13/18 11:52 / srm
Nitrate as N, KCL Extract	ND	mg/kg		1		ASA33-8	09/17/18 11:46 / srm
METALS, AMMONIUM OXALATE EXTRA	CTABLE						
Molybdenum	10	mg/kg		1.0		SW6020	09/17/18 14:33 / by
CACL2 EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 22:34 / rjh
METALS, AMMONIUM ACETATE EXTRA	CTABLE						
Potassium	81	mg/kg		1		SW6010B	09/14/18 00:08 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	ND	mg/kg		0.1		SW6010B	09/17/18 17:42 / rlh
Cadmium	ND	mg/kg		0.1		SW6010B	09/17/18 17:42 / rlh
Copper	1.1	mg/kg		0.1		SW6010B	09/17/18 17:42 / rlh
ron	6	mg/kg		1		SW6010B	09/17/18 17:42 / rlh
Manganese	2.4	mg/kg		0.1		SW6010B	09/17/18 17:42 / rlh
Zinc	21	mg/kg	D	0.2		SW6010B	09/17/18 17:42 / rlh

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

QCL - Quality control limit.

D - RL increased due to sample matrix.



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:	Entact LLC
Project:	Lower Dump Sump Borrow Area
Lab ID:	B18090560-003
Client Sample ID:	LDS-TP-01

 Report Date:
 09/20/18

 Collection Date:
 09/04/18
 14:00

 DateReceived:
 09/07/18

 Matrix:
 Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	7.0	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	32	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	74	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	19	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	7	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
H, sat. paste		s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste		mmhos/cm	l	0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	19.2			0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste		meq/L		0.05		SW6010B	09/18/18 21:50 / rlh
<i>l</i> agnesium, sat. paste		meq/L		0.08		SW6010B	09/18/18 21:50 / rlh
Sodium, sat. paste		meq/L		0.04		SW6010B	09/18/18 21:50 / rlh
odium Adsorption Ratio (SAR)	0.23	unitless		0.01		Calculation	09/19/18 14:42 / srm
CID-BASE ACCOUNTING							
Sulfur, Total	ND	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Drganic Matter	0.9			0.2		ASA29-3	09/16/18 13:32 / srm
ime as CaCO3	1.4			0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen		mg/kg		1		ASA24-5	09/13/18 11:57 / srm
litrate as N, KCL Extract	ND	mg/kg		1		ASA33-8	09/17/18 11:49 / srm
IETALS, AMMONIUM OXALATE EXTRA	CTABLE						
lolybdenum	ND	mg/kg		1.0		SW6020	09/17/18 14:36 / by
CACL2 EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 22:38 / rjh
IETALS, AMMONIUM ACETATE EXTRA	CTABLE						
Potassium	87	mg/kg		1		SW6010B	09/14/18 00:12 / rjh
IETALS, DTPA EXTRACTABLE							
Aluminum		mg/kg		0.1		SW6010B	09/17/18 17:46 / rlh
Cadmium		mg/kg		0.1		SW6010B	09/17/18 17:46 / rlh
Copper	0.3	mg/kg		0.1		SW6010B	09/17/18 17:46 / rlh
ron		mg/kg		1		SW6010B	09/17/18 17:46 / rlh
Manganese		mg/kg		0.1		SW6010B	09/17/18 17:46 / rlh
Zinc	2.2	mg/kg	D	0.2		SW6010B	09/17/18 17:46 / rlh

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

QCL - Quality control limit.

D - RL increased due to sample matrix.



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte	Result Units	RL %REC Low Limit High Limit RPD RPDLimit Qual
Method: ASA10-3		Batch: 125587
Lab ID:B18090552-001A DUPConductivity, sat. paste	Sample Duplicate 3.67 mmhos/cm	Run: MISC-SOIL_180918B         09/18/18 17:16           0.10         0.8         30
Lab ID:LCS-1809181716Conductivity, sat. paste	Laboratory Control Sample 4.07 mmhos/cm	Run: MISC-SOIL_180918B         09/18/18 17:16           0.10         99         70         130
Lab ID: B18090552-001A DUP pH, sat. paste	Sample Duplicate 7.50 s.u.	Run: MISC-SOIL_180918B         09/18/18 17:16           0.10         0.0         10
Lab ID: LCS-1809181716 pH, sat. paste	Laboratory Control Sample 7.10 s.u.	Run: MISC-SOIL_180918B 09/18/18 17:16 0.10 95 90 110



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	ASA15-5								Batch:	R307356
Lab ID:	B18090558-003A DUP	Sample Duplic	ate			Run: MISC	-SOIL_180914A		09/14	1/18 11:46
Sand		61.0	%	1.0				1.7	30	
Silt		26.0	%	1.0				7.4	30	
Clay		13.0	%	1.0				8.0	30	
Lab ID:	LCS-1809141146	Laboratory Co	ntrol Sample			Run: MISC	-SOIL_180914A		09/14	1/18 11:46
Sand		21.0	%	1.0	88	70	130			
Silt		58.0	%	1.0	107	70	130			
Clay		21.0	%	1.0	95	70	130			



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	ASA24-5						Batch:	OM_9-1	3-2018_11-	19-16AMA
<b>Lab ID:</b> Phosphorus	LCS , Olsen	Laboratory Co 48	ontrol Sample mg/kg	1.0	108	Run: FIA20 70	05-B_180913A 130		09/13	3/18 11:20
<b>Lab ID:</b> Phosphorus	<b>B18090560-002ADUP</b> , Olsen	Sample Dupli 4.8	cate mg/kg	1.0		Run: FIA20	)5-B_180913A	7.1	09/13 30	3/18 11:53
<b>Lab ID:</b> Phosphorus	<b>B18090560-002AMS</b> , Olsen	Sample Matrix 17	x Spike mg/kg	1.0	117	Run: FIA20 70	05-B_180913A 130		09/13	3/18 11:55



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte	Result Units	RL %REC Low Limit High Limit RPD RPDLimit Qual
Method: ASA29-3		Batch: R307406
Lab ID: B18090552-001A DUP Organic Matter	Sample Duplicate 1.87 %	Run: MISC-SOIL_180916A         09/16/18 13:32           0.17         0.9         30
Lab ID: LCS-1809161332 Organic Matter	Laboratory Control Sample 4.58  %	Run: MISC-SOIL_180916A         09/16/18 13:32           0.17         117         70         130



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte	Result Units	RL %REC Low Limit High Limit RPD RPD	Limit Qual
Method: ASA33-8		Batch: OM_9-17-20	018_11-28-59AM
Lab ID: LCS	Laboratory Control Sample	Run: FIA205-B_180917A	09/17/18 11:30
Nitrate as N, KCL Extract	10.8 mg/kg	1.0 100 70 130	
Lab ID: B18090560-003ADUR	Sample Duplicate	Run: FIA205-B_180917A	09/17/18 11:50
Nitrate as N, KCL Extract	0.655 mg/kg	1.0	30
Lab ID: B18090560-003AMS	Sample Matrix Spike	Run: FIA205-B_180917A	09/17/18 11:51
Nitrate as N, KCL Extract	5.30 mg/kg	1.0 84 70 130	



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte	Result Units	RL %REC Low Limit Hi	gh Limit RPD	RPDLimit Qual
Method: Calculation				Batch: R307623
Lab ID:B18090552-001A DUPSodium Adsorption Ratio (SAR)	Sample Duplicate	Run: MISC-SC	DIL_180919A	09/19/18 14:42
	2.53 unitless	0.010	2.0	30
Lab ID: LCS-1809191442	Laboratory Control Sample	Run: MISC-SC	DIL_180919A	09/19/18 14:42
Sodium Adsorption Ratio (SAR)	8.44 unitless	0.010 90 70	130	



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte	Result Units	RL	%REC Low Limit High Limit RPD RPDLimit Qual
Method: Sobek Modified			Batch: R307623
Lab ID: B18090552-001ADUP Sulfur, Total	Sample Duplicate 0.220 %	0.010	Run: MISC-SOIL_180919A 09/19/18 12:54 6.6 50
Lab ID: LCS-R307623 Sulfur, Total	Laboratory Control Sample 0.220 %	0.010	Run: MISC-SOIL_180919A09/19/18 13:0310550150



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte		Result Units	RL	%REC	Low Limit High Limit	RPD	RPDLimit Qual
Method:	SW6010B						Batch: 125412
Lab ID: Boron	LCS-125412	Laboratory Control Sample 0.420 mg/kg	0.10	117	Run: ICP203-B_180913A 70 130		09/13/18 21:48
Lab ID: Boron	B18090552-001ADUP	Sample Duplicate 0.0738 mg/kg	0.10		Run: ICP203-B_180913A		09/13/18 21:56 30
Lab ID: Boron	B18090552-002AMS2	Sample Matrix Spike 9.72 mg/kg	0.10	96	Run: ICP203-B_180913A 70 130		09/13/18 22:11
Method:	SW6010B						Batch: 125413
<b>Lab ID:</b> Potassium	LCS-125413	Laboratory Control Sample 400 mg/kg	1.4	104	Run: ICP203-B_180913A 70 130		09/13/18 22:54
<b>Lab ID:</b> Potassium	B18090552-001ADUP	Sample Duplicate 102 mg/kg	1.4		Run: ICP203-B_180913A	6.1	09/13/18 23:02 30
<b>Lab ID:</b> Potassium	B18090552-002AMS2	Sample Matrix Spike 4540 mg/kg	1.5	89	Run: ICP203-B_180913A 70 130		09/13/18 23:10



Prepared by Billings, MT Branch

### Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit Qual
Method: S	W6010B								Batch: 12548
Lab ID: L	LCS-125485	Laboratory Control Sample				Run: ICP20	03-B_180917A		09/17/18 16:2
Aluminum		ND	mg/kg	0.10		70	130		
Cadmium		0.103	mg/kg	0.10	103	70	130		
Copper		2.86	mg/kg	0.10	86	70	130		
Iron		11.0	mg/kg	1.0	71	70	130		
Manganese		8.13	mg/kg	0.10	87	70	130		
Zinc		3.46	mg/kg	0.10	82	70	130		
Lab ID: E	B18090691-001AMS2	Sample Matri	x Spike			Run: ICP20	03-B_180917A		09/17/18 16:4
Aluminum		8.19	mg/kg	0.10	77	50	150		
Lab ID: E	B18090552-001A DUP	Sample Dupli	cate			Run: ICP20	)3-B_180917A		09/17/18 17:0
Aluminum		ND	mg/kg	0.10					30
Cadmium		0.105	mg/kg	0.10				3.8	30
Copper		3.28	mg/kg	0.10				1.4	30
Iron		14.6	mg/kg	1.0				2.8	30
Manganese		2.67	mg/kg	0.10				4.1	30
Zinc		3.93	mg/kg	0.10				1.6	30
Lab ID: E	B18090552-002AMS2	Sample Matri	x Spike		Run: ICP203-B_180917A				09/17/18 17: <sup>2</sup>
Cadmium		0.781	mg/kg	0.10	71	50	150		
Copper		4.50	mg/kg	0.10	90	50	150		
Iron		24.5	mg/kg	1.0	76	50	150		
Manganese		9.80	mg/kg	0.10	76	50	150		
Zinc		4.62	mg/kg	0.10	74	50	150		
Method: S	W6010B								Batch: 12558
Lab ID: L	LCS-125587	Laboratory Co	ontrol Sample			Run: ICP20	04-B_180918A		09/18/18 21:0
Calcium, sat. p	paste	14.2	meq/L	0.050	122	70	130		
Magnesium, s	at. paste	8.16	meq/L	0.082	112	70	130		
Sodium, sat. p	baste	28.2	meq/L	0.043	97	70	130		
Lab ID: E	B18090552-001A DUP	Sample Dupli	cate			Run: ICP20	04-B_180918A		09/18/18 21:0
Calcium, sat. p	paste	33.8	meq/L	0.050				1.2	30
Magnesium, sa	at. paste	4.27	meq/L	0.082				0.8	30
Sodium, sat. p	baste	11.1	meq/L	0.043				1.5	30
Lab ID: E	B18090552-002AMS2	Sample Matri	x Spike			Run: ICP20	04-B_180918A		09/18/18 21:1
Calcium, sat. p	paste	44.0	meq/L	0.050	82	70	130		
Magnesium, s		24.0	meq/L	0.082	96	70	130		
Sodium, sat. p	•	22.1	meq/L	0.043	92	70	130		



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18 Work Order: B18090560

Analyte		Result Units	RL S	%REC Low Limit High Limit RPD	RPDLimit Qual
Method:	SW6020				Batch: 125484
<b>Lab ID:</b> Molybdenu	<b>LCS-125484</b> m	Laboratory Control Sample 4.1 mg/kg	1.0	Run: ICPMS202-B_180917A 83 30 130	09/17/18 13:50
Lab ID: Molybdenu	<b>B18090552-001AMS</b>	Sample Matrix Spike 11 mg/kg	1.0	Run: ICPMS202-B_180917A 70 130	09/17/18 13:58 A
<b>Lab ID:</b> Molybdenu	B18090552-001A DUP m	Sample Duplicate 100 mg/kg	1.0	Run: ICPMS202-B_180917A 5.3	09/17/18 14:03 30

RL - Analyte reporting limit.



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte	Result Units	RL %REC Low Limit High Limit RPD RPDLimit Qual
Method: USDA23c		Batch: R307636
Lab ID: B18090552-001A DUP Lime as CaCO3	Sample Duplicate 3.20 %	Run: MISC-SOIL_180919B         09/19/18 16:38           0.10         6.1         30
Lab ID: LCS-1809191638 Lime as CaCO3	Laboratory Control Sample 12.0 %	Run: MISC-SOIL_180919B         09/19/18 16:38           0.10         112         70         130



Prepared by Billings, MT Branch

Client: Entact LLC

Project: Lower Dump Sump Borrow Area

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	USDA27a								Batch:	R307623
Lab ID: Saturation	B18090552-001A DUP	Sample Duplica 24.0	ate %	0.10		Run: MISC	-SOIL_180919A	1.2	09/19 30	9/18 14:42
Lab ID: Saturation	LCS-1809191442	Laboratory Cor 37.5	ntrol Sample %	0.10	99	Run: MISC 70	-SOIL_180919A 130		09/19	)/18 14:42



# Work Order Receipt Checklist

### Entact LLC

B180	90560
------	-------

Login completed by:	Tabitha Edwards		Date I	Received: 9/7/2018		
Reviewed by:	BL2000\raschim		Received by: bgs			
Reviewed Date:	9/17/2018		Carr	ier name: Return-UPS NDA N/C		
Shipping container/cooler in	good condition?	Yes 🗹	No 🗌	Not Present		
Custody seals intact on all sl	hipping container(s)/cooler(s)?	Yes 🗹	No 🗌	Not Present		
Custody seals intact on all sa	ample bottles?	Yes	No 🗌	Not Present 🗹		
Chain of custody present?		Yes 🗹	No 🗌			
Chain of custody signed whe	en relinquished and received?	Yes 🗹	No 🗌			
Chain of custody agrees with	n sample labels?	Yes	No 🗹			
Samples in proper container,	/bottle?	Yes 🗹	No 🗌			
Sample containers intact?		Yes	No 🗹			
Sufficient sample volume for	indicated test?	Yes 🗹	No 🗌			
All samples received within h (Exclude analyses that are c such as pH, DO, Res CI, Su	onsidered field parameters	Yes 🗸	No 🗌			
Temp Blank received in all sl	hipping container(s)/cooler(s)?	Yes	No 🗹	Not Applicable		
Container/Temp Blank tempe	erature:	°C No Ice				
Water - VOA vials have zero	headspace?	Yes	No 🗌	No VOA vials submitted		
Water - pH acceptable upon	receipt?	Yes 🗌	No 🗌	Not Applicable 🗹		

### **Standard Reporting Procedures:**

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

### **Contact and Corrective Action Comments:**

The temperature of the sample(s) for shipping container 1 was 20.6°C, shipping container 2 was 20.8°C and shipping container 3 was 17.6°C.

The sample container for LDS-TP-03 was received torn. Placed sample container into another ziploc and proceeded with analysis per phone call with Sarah Miller.

Turnaround time changed to 10 days per Shari Endy, Energy Laboratories Project Manager.

The sample identification indicated on the container label for sample LDS-TP-01 is LDS-TP-03 and on the Chain of Custody it is LDS-TP-01 however the collection date/time matched from the container label to the Chain of Custody. Proceeded with the sample identification as indicated on the Chain of Custody.

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ENERGY (3)	
ENE	- gp

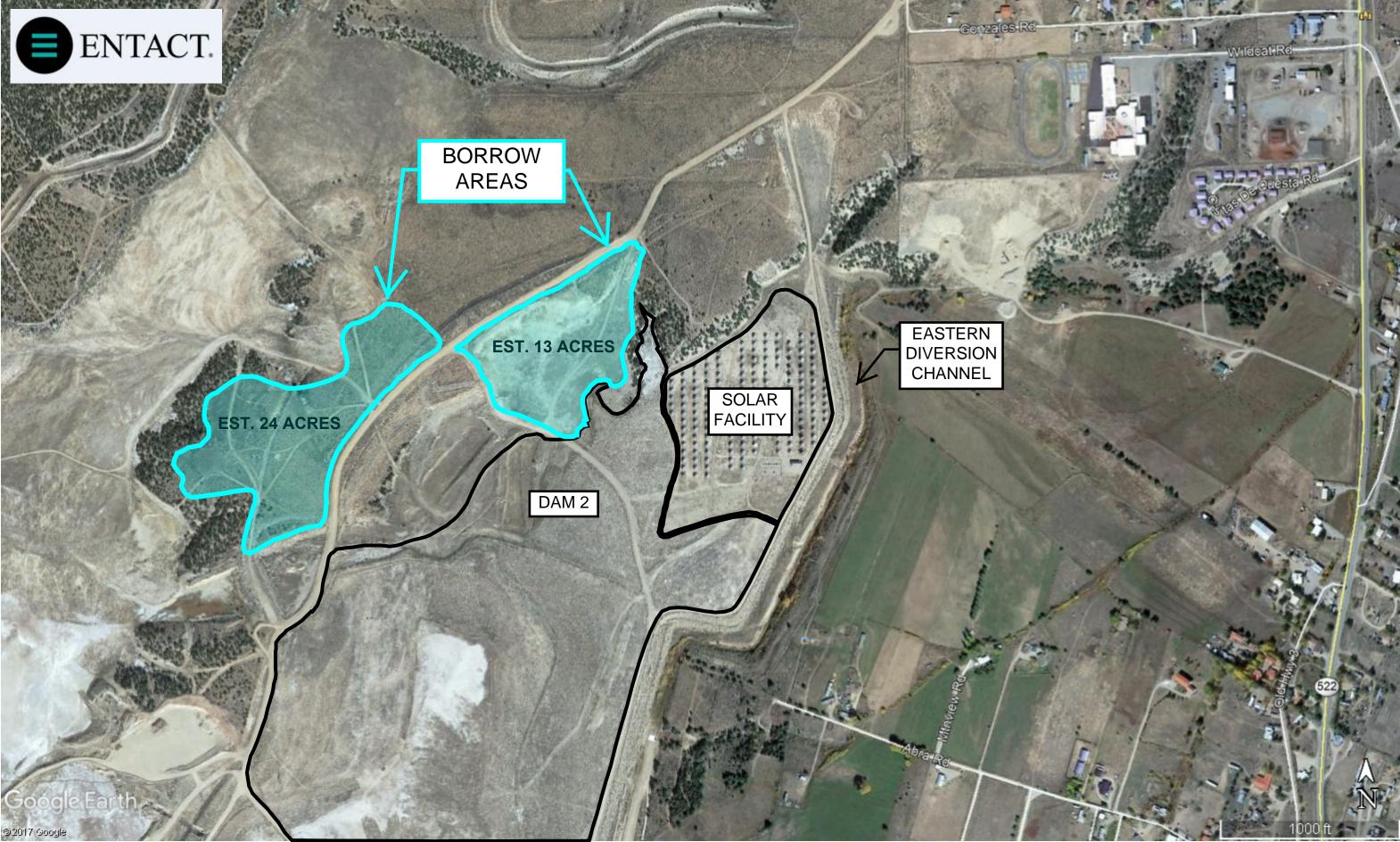
# Chain of Custody & Analytical Request Record

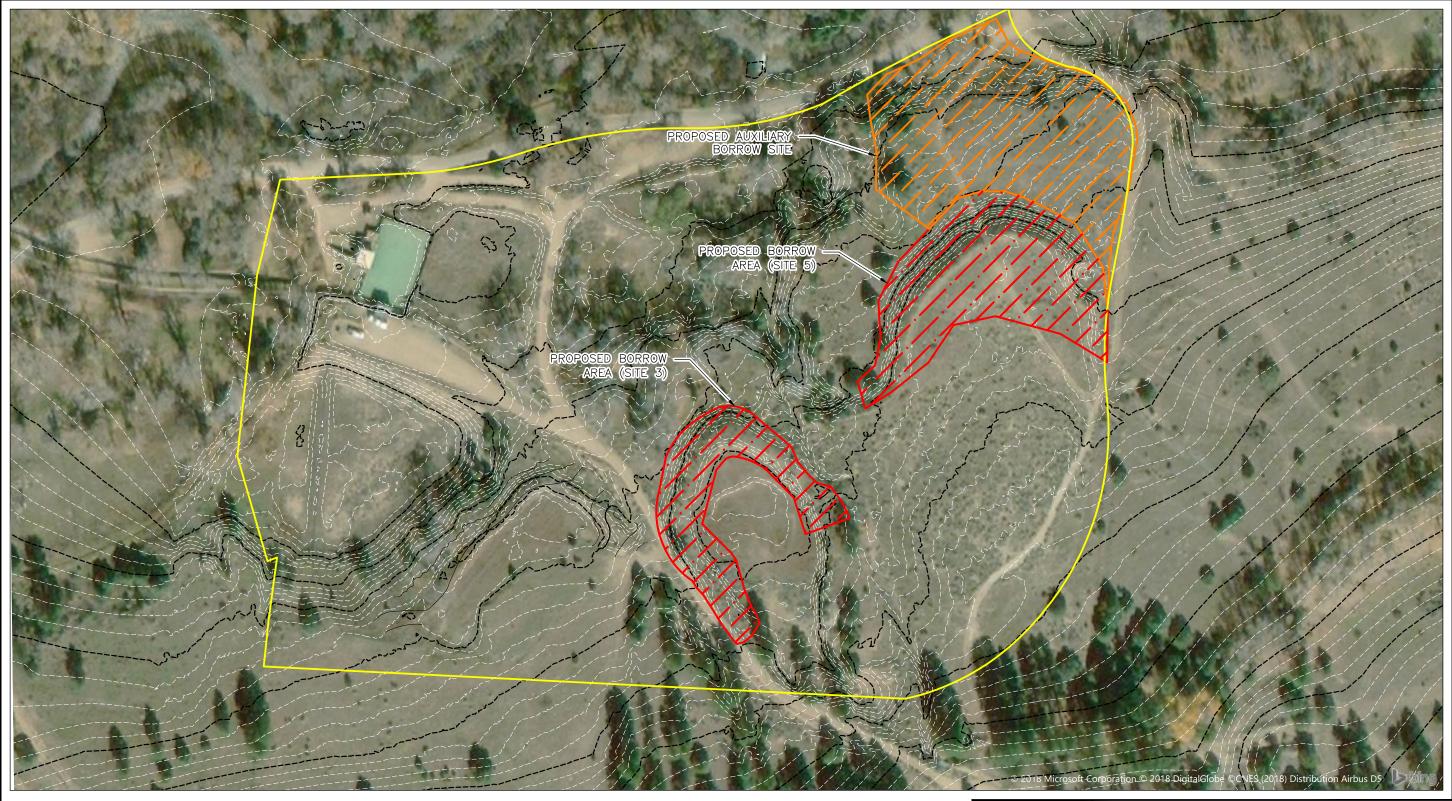
www.energylab.com         Report Information (if different than Account Information)         company/Name         Mailing Address         Mailing Address         Mailing Address         City, State, Zip         Email         Receive Report DHard Copy □Email         Special ReportFormats:         City, State, Zip         Email         Special ReportFormats:         D LEVEL IV         I LEVEL IV         Matrix Codes         A. Air         W. Water         Solids         V. Vegetation         B. Biosssay         O. Other         DM. Water         D. Other
--

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

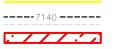
Analyte	Method
Aluminum	E6010.20
Boron	E6010.20
Cadmium	E6010.20
Calcium, saturated paste	E6010.20
Calcium Carbonate	USDA23c
Conductivity, saturated paste	ASA10-3
Copper	E6010.20
Iron	E6010.20
Magnesium, saturated paste	E6010.20
Manganese	E6010.20
Molybdenum	E6010.20
Nitrate as N, KCL Extract	ASA33-8
pH, saturated paste	ASA10-3
Phosphorus, Olsen	ASA24-5
Potassium	E6010.20
Sodium Adsorption Ratio (SAR)	Calculation
Sodium, saturated paste	E6010.20
Sulphur	Sobek Modified
Total Organic Matter	Walkley-Black
Zinc	E6010.20
Moisture Content	D2974
Coarse Fragments	ASA15-3
Particle Size	ASA15-5

Requested Analyses for Borrow Area Soil Samples submitted by ENTACT



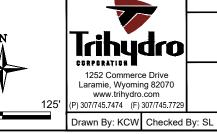


### EXPLANATION



• / / /

LOWER DUMP SUMP AREA EXISTING GROUND (2-FT INTERVAL, 10-FT INDEX) PROPOSED BORROW AREAS PROPOSED AUXILIARY BORROW SITE



### FIGURE B-2 LOWER DUMP SUMP PROPOSED BORROW LOCATIONS

### QUESTA MINE CHEVRON MINING QUESTA, NEW MEXICO

ed By: SL Scale: AS SHOWN Date: 11/5/18 File: 20181014\_SHEET-TAILINGS

**APPENDIX G** 

HEALTH AND SAFETY FORMS



### Pre-Fieldwork Safety-Readiness Review Form

For all field projects

		Names and initials of required	participants:					
	2. Project Directo							
Irinyaro	5. Project Manage 4. Field Supervise							
CORPORATION		5. Safety Officer/Lead:						
Business unit name:	Business unit name:							
Client name: Names and initials of other participants:								
Project name and number:	1. Project-team members:							
Date review performed:		2. Contractor(s):						
Scheduled project-start date:		3. Subcontractor(s):						
Scheduled project-end date:								
	Work-Related Hazards							
Work-Scope Tasks	(refer to the 3x5 Hazard-Assessment Triangle)	Anticipated Ha	azard-Mitigation	n Measures				
Pre-Fieldwork Safety-Readiness Review Checklist			Yes	No	N/A	CAN		
1 Has the project team secured the necessary safet	y and other work permits required to complete the p	roposed work?						
2 Has a project-specific or site-specific HASP been	prepared and/or updated, and have all project-team	members reviewed the HASP?						
3 If a contractor(s) will be used on this project, have								
	ed to be prepared by the project's subject-matter ex							
4 team, and marked up where appropriate before sta								
5 If this project involves one or more lone workers, is a plan to manage lone worker safety in place and communicated with the project team?								
6 Do we know if the project site has reliable cell-pho	ne coverage? [If not, request a phone booster from	Autumn Bainer.]						
7 Has a hand-safety evaluation been completed for this project?								
· · ·	8 Has each work space been evaluated (and documented) for the possible presence of confined-space work conditions?							
	bcontractorsreviewed and understand the project-				-			
3		•						
	s and subcontractorsunderstand Stop Work Autho							
11 Have all applicable PPE (e.g., PID, FID, H2S dete	ctor, etc.) and emergency-response equipment bee	n secured and checked for this project?						
12 Have suitable vehicles been secured and are team	n members familiar with the vehicle types and opera	tion?						
13 If a client site-specific orientation is required, have	all team members completed the required training?							
14 Have SSE mentors been assigned and provided w	vith instructions for overseeing each SSE team mem	nber?						
15 Is a plan in-place and assignments made to provid	le oversight of "low-use" or special contractor/subco	ntractor team members?						
Have topics been developed and assignments ma	de for the daily project-safety meetings, including dis	scussing potential daily- and task-specific						
16 hazards?								
17 Has the plan for performing and reporting observations, near misses, and incidents been communicated?								
18 Has the project team been reminded that journey-management plans (JMPs) should be used during the project where appropriate?								
19 Is a traffic-management plan needed for this project and has it been completed and communicated to the project team?								
20 Have procedures for work in or near hazardous areas (e.g., trenches, confined spaces, active units) been communicated?								
20       Have procedures for work in or around equipment (e.g., lockout / tag out, swinging, rotating, backing) been communicated?								
22 Has the Trihydro Excavation, Drilling, and Utility-Locating Checklist been completed for each drilling/excavation project?								
A Have all employees expecting to oversee or perform drilling/excavation work completed the Trihydro "Subsurface Utility Location and Excavation Safety								
23 Best Practices" training session?								
24 Have utility locates been assigned and/or performed in accordance with Trihydro and client procedures?								
25 Is a plan in place for communicating, managing, an	25       Is a plan in place for communicating, managing, and reporting changed conditions (e.g., hazards, weather, team roles)?							
	26       Is a plan in place for transitioning and training changes in personnel on this project?							
20 is a plan in place for transitioning and training changes in personnel of this project?         27 Has the project team assessed potential task- or site-specific hazards and developed a plan(s) to eliminate or mitigate the hazards?								
Is a BUL, BUM, TL, or Senior Manager scheduled to be on site for the onboarding, kickoff, and initial stages of each major field project (e.g., projects								
28 involving subcontractors, complex or different work types, > one week duration, etc.)? If so, please indicate the name of the BUL, BUM, TL, or Senior								
Manager and the date she or he is scheduled to be on site in the "Review / Non-CAN Item Comments" box below.								
	Have all contractors/subcontractors been evaluated, qualified, selected, and approved by the BUL based on Trihydro and/or client-specific							
<sup>29</sup> requirements?								
Is a safety audit with a Senior Manager planned fo	or the early stages of all major field projects? If so,	place indicate the Senier Manager's name and						
	it in the "Review / Non-CAN Item Comments" box b							
Findings / Corrective-Action Needed (CAN) Summa	ary I				1			
CAN Item No.			Responsible	Target	Completed			
(i.e., 1 through 30 from the checklist above)	Description	of CAN Item	Person	Date	Date	Initials		
Review / Non-CAN Item Comments:	1		1					
C:\Users\msmueles\Desktop\H&S\6-28-2016-PFSRR.xisx					REVISION 3: N	ovember 2, 2016		

### **Pre-Fieldwork Safety-Readiness Review Form**

For all field projects

### Instructions:

1. While using this form, attempts should be made to address or correct the items warranting Corrective Action Needed (CAN) at the time of the evaluation. If this is not practical, each CAN item / finding should be documented above, including assignment of an individual responsible for addressing the CAN item and a target completion date. Once all of the CAN items have been completed, the Project Manager should review them with the responsible TL, BUM, or BUL and secure sign-off initials that each CAN item has been addressed satisfactorily.

2. Copies of this form should be retained by the responsible TL, BUM, and/or BUL and submitted to the Trihydro H&S Team via e-mail HealthSafety@Trihydro.com or fax (307) 755-4959. Please contact the Trihydro H&S Team for help conducting pre-fieldwork safety-readiness reviews, or if you have questions, suggestions, or comments about the forms.

# JOB SAFETY ANALYSIS



JSA Version Date: February 29, 2012									
Job Description: Driving									
Project: Questa		Site Location: Site	wide						
Development Team Please include the team members employer and email if not employed by Trihydro Corporation:	Position/Title:			Primary Contact					
1. Pat Henricks	Geologist			(307) 760-9447					
2.									
3.									
Reviewed By Please include the reviewers employer and email if not employed by Trihydro Corporation:	Position			Review Date (MM/DD/YYYY)					
1. Todd Forry	Health and Safet	y Manager		10/25/2012					
2. Torrey Fox	Geologist			6/10/11					
3.									
Personal Protective Equipment (PPE)	Needed:			I					
Eye and Face Protection	<b>Body Protection</b>		Fall Protection						
Safety Glasses	Fire Retardant (	Coveralls	Barriers/G	arriers/Guard Rails					
Face Shield	Poly-coated Tyv	vek Coveralls	Safety Ne						
Chemical Goggles	Chemical Resis	tant Coveralls	Personal	Personal Fall Arrest System					
Head Protection	Chemical Resis	tant Apron	Respiratory	Protection					
Hard Hat	Reflective Safet	ty Vest	Half-Face	e Air Purifying Respirator					
Hearing Protection	Cooling Vest		Full-Face	Air Purifying Respirator					
Ear Plugs	Long sleeved sl	hirt	Chemical	Cartridge					
Ear Muffs	Biological Protect	ion	Particulate	e Filter					
Hand Protection	Snake Gaiters		Cartridge	/Filter Combo					
Industrial Work Gloves	Sunscreen		Ammonia	Cartridge					
Chemical Resistant Gloves	🔲 Insect Repellan	t	H2S Esca	ape Cartridge					
Laceration Resistant Gloves	Hazardous Atmos	phere Protection	Asbestos	Filter (P-100)					
Foot Protection	Air Monitoring E	quipment		Air Purifying Respirator					
Leather Boots	Ventilation Fan		(PAPR) (cont	tact H&S dept.)					
Steel-Toed Boots	Level C		Supplied	Air Respirator (SAR)					
Chemical Resistant Boots	Level B (contac	ct H&S dept.)	(contact H&S	S dept.)					
Water Safety	Level A (contac	ct H&S dept.)	Self-Cont	ained Breathing					
Personal Flotation Device	Decontamination	Materials		CBA) (contact H&S					
U Waders	Equipment Dec	ontamination	dept.)						
Other: Fire extinguisher	Personnel Deco		Other:						
Other:     First aid/vehicle kit     Other:     GOAL cones     Other:									

Job Steps	Hazard(s)	Potential Hazard(s)	Critical Action(s)	Responsible Person
Routine or non- routine journey management plan (JMP) – check (all drivers)		A. Personal Injury (Gravity) B. Property damage or physical injury (Motion)	<ul> <li>A. Check the JMP before proceeding to the vehicle.</li> <li>B. Assess if journey is needed due to weather conditions (e.g., snow, ice, rain, wind). Check before each vehicle trip around the site since work areas can be changed throughout the day.</li> </ul>	
Perform vehicle inspection (all drivers)		A. Vehicle failure; Accident or injury (Gravity) (Motion)	<ul> <li>A. Fill out vehicle inspection form for any vehicles used for the day. DO NOT use vehicle until issues are addressed.</li> <li>Clean mirrors and windows. Inspect the interior of the vehicle; including seat belts and gauges.</li> <li>Remove any clutter or items that may affect your driving, visibility or pedal control.</li> <li>Follow appropriate maintenance schedule for your vehicle.</li> <li>Verify insurance card, registration, and inspection.</li> <li>Refer to the owner/operator manual generally kept in the glove box.</li> <li>Verify presence of spill kit, first aid kit, and fire extinguisher within inspection period</li> </ul>	

Job Steps	Hazard(s)			Potential Hazard(s)	Critical Action(s)	Responsible Person
	-		x			
Configure seating and controls and lock doors (all drivers)	あるシー			A. Personal Injury Visibility; poor driver ergonomics and/or poor driver control (Motion)	<ul> <li>A. Adjust seating to a comfortable position and so that you can easily reach the pedals and steering wheel.</li> <li>Adjust all mirrors.</li> <li>Wear seat belt.</li> <li>If you haven't operated this vehicle before, become familiar with all the controls and where everything is located in the vehicle.</li> <li>Look for blind spots in your viewing area.</li> <li>Refer to the owner's manual if necessary.</li> </ul>	
Starting vehicle (all drivers)			x 7 	A. Unexpected vehicle movement; engine damage or failure (Motion)	<ul> <li>A. Before starting, ensure that the vehicle is in park and the parking brake is applied.</li> <li>After starting, check all gauges for proper temperatures, pressures, etc.</li> </ul>	
Pulling away from parked area (all drivers)		x	x 	A. Collision with other vehicles, objects or persons (Gravity) (Motion)	<ul> <li>A. Check mirrors and over the shoulder before pulling away.</li> <li>Vehicle should be situated so the first movement is forward, however if backing, either use a spotter or blow horn to warn others.</li> <li>Proceed cautiously.</li> </ul>	
Driving (all drivers)		x x x		<ul> <li>A. Vehicle strikes; vehicle accidents; equipment damage (Gravity) (Motion)</li> <li>B. Collision with wildlife (Biological)</li> </ul>	<ul> <li>A. Follow JMP applicable to your journey. Review driving JSA. Plan your route, review maps before leaving.</li> <li>Obey all laws of the land as well as site procedures.</li> </ul>	

Job Steps	Hazard(s)	Potential Hazard(s)	Critical Action(s)	Responsible Person
			<ul> <li>Follow posted speed limit.</li> <li>Be prepared to 'expect the unexpected'. You never know what someone else (or animals) might do.</li> <li>NEVER drive under the influence of drugs or alcohol.</li> <li>Follow posted signs at other locations.</li> <li>Never operate the vehicle if you are abnormally tired.</li> <li>Cell phone usage is prohibited while driving a vehicle, including hands free devices such as headset and speaker phones.</li> <li>Implement 'first move forward' by backing into locations upon arrival.</li> <li>Be observant of pedestrians (main field office area) and other traffic around you.</li> <li>Engage parking brake once vehicle is parked. Do not place equipment/supplies above mirror line of sight (i.e., inside cab and or truck bed).</li> <li>Pull off the road if necessary during bad weather.</li> <li>B. Scan the area for wildlife including dogs, cats, deer, cows, horses, elk, coyotes, fox's, badgers, and prairie dogs while traveling on site. Watch road sides for movement and pull vehicle to side of road if animal observed. Be particularly aware of animals present in roadway during dusk and morning.</li> </ul>	
Parking (all drivers)		A. Pedestrian collision / Property damage(Gravity)(Motion)	<ul> <li>A. Use pull through parking spots when available</li> <li>Use signals before pulling from curb and during any change of lane or turn</li> </ul>	

Job Steps	Hazard(s)				Potential Hazard(s)		Critical Action(s)	Responsible Person
Post drive (all drivers)		x	x	A.	Personal Injury / Property damage (Gravity)(Motion)	Α.	<ul> <li>Back into parking space when possible and safe</li> <li>Maintain a cushion of safety from fixed objects when parking</li> <li>Set parking brake if on incline; chock wheels if working on steep slopes</li> <li>Report vehicle problems to company representative or rental car agency.</li> </ul>	



As the Supervisor my signature below indicates that the requirements, conditions, and procedures listed above are in place and have been verified and reviewed with the affected personnel prior to the start of work.

Supervisor Name (print):	Signature	Date

Prior to work, I have read and understand the PPE, safety tools/equipment/instruments, and associated permits needed for this task. I also understand the job steps, potential hazards, and critical actions identified for employee task and hazard awareness. I agree to have this JSA on site and identify daily variances and understand I can make pen and ink changes to meet those variances. JSAs used at the task site that contain pen-and-ink changes ("dirtying up") are to be kept in the project folder for record.

Name (print):	Signature	Date

# END OF DAY

# REVISIONS TO JSA (Any tasks that were "dirtied up")

Date	Job Step #	# REVISION	Does JS to be u permar	SA need pdated nently?	Responsible Person
	•		Yes	No	

# DAILY TAILGATE SAFETY MEETING



NC	DTE: A new i	tailgate meeting	g must	be conduc	ted if con	ditions,	location, or p	ersonnel change	•	_	
Da	ite:			_ Time: _		_ 🗌 a.ı	m. 🗌 p.m.	Location:			(city, state)
		:									
		•									
<u> </u>	mmitmont	to Safaty									
1.		-	mily Tril	avdro clionte	and contract	tore by we	tching for and				
1.	mitigating risk complying with	nyself for me, my fa y behaviors, exercis h Trihydro and clien	sing stop It policies	-work authority s, procedures,	y to prevent and JSAs/J	incidents LAs	and injuries and	-		1	lihydro
2.	l understand to in providing qu	hat safety is my per uality work.	rsonal re	sponsibility an	d that worki	ng safely i	is a key compone	ent		mo	ist serious risks
3.		ample for my fellow					, ,	у.			
4.		ensively and "Safely s and regulations.	y for My	Family," abidir	ng by Trihyd	ro and clie	ent policies and			35514	azard Assessment
5.	I will "slow dow task efficiently	wn" appropriately to and safely.	work at	a pace that wi	ill allow me	and others	s to complete eac	sh	1	×Lo	× = ×
6.		elf accountable for ne, my coworkers, o						ut		n mos	t frequent risks
								· · · · · · · · · · · · · · · · · · ·		.1. 11	
	" Stop Work A	(SVVA) –	Every	one nas the	autnority a	and obliga	ation to immedi	iately stop all unsat	e wor	К.	
lde	ntify High-Ha	zard Work:									
	Hot Work			Elevated/o	verhead w	vork	Boat / ov	ver-water operation	S		Work involving equipment
											within 15' of active overhead electrical line or
	LOTO			Excavation	ns - any			on, removal of and buried structu	roo		pole supporting an electric
	Confined S	pace Entry		Drilling - ar	ny		pipelines		lle5		line
Δs	sociated a	nd Identified	Haza	rds:			High-press	ure processes		Pinch	n points
	Abrasions, cu		_	arthquake			_ · ·	erature processes			er tools
		& co-workers)		lectrical			☐ High wind			Pulle	
_	Asbestos	,		quipment fai	ilure		Laceration			Radia	ation/X-ray
Π	Biological			rgonomic			Lightning			Secu	-
	Buried utilities	5		xcavations in	n area?		Loud noise	9			re weather
_	Burn hazards		_	alling			Machine gu				
	Chemical exp			Fire/explosion	า		Motor vehi	-			, trips, falls
_	Cold stress			I <sub>2</sub> S				/fixed blades			urface utilities
	Compressed	nases		land injury			Overexertio			Traffi	
	Crane or liftin	-		leat stress			Overhead			Wate	
	Drilling in area			leavy equipn	nent		Pedestrian				r:
		α:		cavy cquipi	nom					Ouric	
Se	e it! Identi	ify Current O	bjecti	ve Hazaro	ds:						
Ass	ess Trihydro's	•	-		Assess T		5 Most	Other	Haza	rds	
Ser	ious Risks	Traffic/Heavy E	auipme	ent	Frequent		Hand Injuries	1	Г	_	Veather
6					× 6-			141 1667		-	
8		Hazardous Atm	iospher	5	7		Lifting		L		Vorking at Heights
10		Utility Contact			+94	$\Box$	Biological Haz	zards			

Chemical Exposure

Slips, trips, falls

-

### Personal Protective Equipment (PPE):

☐ Hard hat	Arm sleeves	Dust mask	equipment:					
Safety glasses	High visibility vest	Respirator	_					
Safety toed boots	☐ Rain gear	Cartridges/filters:	De □					
Ear plugs (as needed)	Rubber boots	H <sub>2</sub> S monitor Bump test	□					
E Face shield	SCBA	FRCs/Nomex						
☐ Fall protection	Snake chaps	☐ Tyvek <sup>®</sup>						
Gloves (as needed)	Sunscreen (as needed)	Insect repellant *Do not apply DEET to FF						
	, <i>, , , , , , , , , , , , , , , , , , </i>		KUS .					
Before Beginning Work:								
Sign in and out of process unit	] N/A		d "dirty up" if necessary					
HASP reviewed & acknowledged		Weather forecast: Wind Direction:	Hot Cold Incle	ment				
Locate the nearest evacuation poir	•	Employee(s) are v						
Identify the nearest fire extinguisher first aid kit, and Material Safety Date		Perform a "self che	eck" on each personal $H_2$	S monitor				
☐ Identify CPR/AED/first aid certified	, ,	Perform a Work-Si	te Self Assessment (WS	SA)				
If lone worker, implement lone work	ker procedures 🔲 N/A		bard emergency flyer for the ble location inside vehicle					
Identify SSE, visitor(s), or guest(s)	□ N/A	Barricade work zor						
Determine and acquire necessary		Review WorkCare Injury Accident Program card						
Permit required:	_	PPE Action Levels (PID: 10ppm)						
Safe Vehicle Use:								
Pre-inspection complete	Mileage sheet fille	d out	GOAL sticker in wind	ow				
Seat belt	No cell phones us	ed while driving	Spotter used (if available)	Spotter used (if available)				
Follow all speed and traffic rules	Parked in a safe lo	cation 🗌 First move forward, backed in						
Emergency brake used	Orange cone used	Load secured in vehicle						
Keys left in vehicle	Chock tires (if nee	led)						
Trailer Safety Inspection form	Other:		Other:					
Site-Specific Comments:								
Positive Reinforcement (R+):								
Signatures:								
Meeting Conducted By:	(desi	gnated project on-site sa	afety responder) Co	ompany:				
Printed Name	Signature	Company	Attended Mid-Day Safety Focus	Is this worker new on-site?				
1.			🗌 Yes 🗌 No	🗌 Yes 🗌 No				
2.			🗌 Yes 🗌 No	🗌 Yes 🗌 No				
3.			🗌 Yes 🗌 No	🗌 Yes 🗌 No				
4.			 □ Yes □ No	 □ Yes □ No				
5.				☐ Yes ☐ No				
6.								
7.								

8.

🗌 Yes 🗌 No

🗌 Yes 🗌 No

# JOURNEY MANAGEMENT PLAN



Date:	Project Number:		Driver:		
Destination:			Driver Cell Number:		
Departure Time:		ŀ	Anticipated Arrival Time:		
Total Hours (not to exceed 1	6 hours):	 =	Work Hrs	+	Driving Hrs

Plan the journey and notify personnel at destination of your plans. Notify arrival contact if you will not arrive at scheduled time. Keep a copy of this plan with you. Trihydro's main phone number is 307-745-7474. Normal business hours are 8am-5pm, M-F.

In case of an emergency or incident, contact the Health & Safety Response Team at (307) 755-4888.

Purpose of Trip							
Hazards							
Pre-Trip Questions							
Is this trip necessary?	-					🗌 Yes	🗌 No
Is there an alternative that doe	es not involve	driving?				🗌 Yes	🗌 No
If yes, by what means:							
Is someone else already going	g to the same	destination?				🗌 Yes	🗌 No
Do I have a map to my destina	ation?					🗌 Yes	🗌 No
Has the proper vehicle been s	elected?					🗌 Yes	🗌 No
Is the vehicle equipped with en	mergency sup	plies?				🗌 Yes	🗌 No
Do I have current driver trainin	ng for this trip?	)				🗌 Yes	🗌 No
Am I well rested and alert for t	he journey?					🗌 Yes	🗌 No
Do I have effective means of c	communication	ns during my je	ourney?			🗌 Yes	🗌 No
Has a pre-trip vehicle inspection	on been comp	leted and doc	umented?			🗌 Yes	🗌 No
Have road condition reports be	een reviewed	prior to the jou	ırney?			🗌 Yes	🗌 No
Weather:	🗌 Dry	U Windy	🗌 Rain	Snow	☐ Icy	🗌 Fog	Dust
Road Conditions:	Dirt Roa	d 🗌 Cor	nstruction	Paved	Road	Mixed Co	nditions
Night Driving:	🗌 Yes	🗌 No		Is it essential?	🗌 Yes	🗌 No	
Vehicle:	Fleet Ve	hicle	🗌 Rer	ntal Vehicle	Pers	sonal Vehicle	
Make*:	Model*:		Y	′ear*:	(	Color*:	
VIN* or Fleet Number:				License Pla	te State/Nur	nber*:	
Condition:	] Satisfactory						
Vehicle Inspection Form Comp	oleted?	[	Yes	🗌 No			
Vehicle preventive maintenand	ce up to date?	, [	Yes	🗌 No			

#### When traveling to the site, contact your supervisor/project manager to confirm your safe arrival. On return journey, contact your supervisor/project manager when you depart from site and upon arrival back to start point to confirm your safe travels.

\*For rental or personal vehicle, if available.

#### Journey Management Plan

For Overnight Sta	ys Hotel Name:	Telephone:			
	City:	State:			
Route Planned	(Auto route, train information, and/or flight information):	Map Attached Separately			
Unconventional T	Verify the following:  Name is on the aircraft manifest  Pilot performs safety briefing prior to takeoff Hats are not worn on flight line	<ul> <li>Do not approach aircraft from the rear; approach from front quadrant or side</li> <li>Stay clear of tail rotor</li> </ul>			
Private Aircraft	<ul> <li>Verify the following:</li> <li>Name is on the aircraft manifest</li> <li>Pilot performs safety briefing prior to takeoff</li> <li>Hats are not worn on flight line</li> </ul>	<ul> <li>Do not approach aircraft from the rear; approach from front quadrant or side</li> </ul>			
Watercraft	<ul> <li>Verify the following:</li> <li>Registration number is on the watercraft manifest</li> <li>Captain performs safety briefing prior to launch</li> </ul>	<ul> <li>Personal flotation devices are available/worn</li> <li>Notify supervisor of vessel number</li> </ul>			
Other:					
Supervisor/PM App	roval:	Date:			
Employee site arriv	al: Date:	Time:			
Employee site depa	arture: Date:	Time:			
Employee home ar	rival: Date:	Time:			

## EXAMPLE FIELD DIRECT OBSERVATION FORM

Observer	
Date	11/21/2012 15 Contract Day
Temperature	Work Day
Sky	Work Start
Wind	Work Stop
	B Z U Ⅲ Ⅲ Ⅲ Ⅲ Fonr Paregraph
Health and Safety	
	B Z U II 注 律律律 Font Paragraph
Remarks	
	B Z U II II 译 律 律 Font Paragraph

Work Observation

Personnel	Role
57	( <b>X</b> )
ý.	
	. X
	Add

Equipment	Count
1	
· · · · ·	
	Add

	Bid Number	Bid Item	Unit	Estimate Quantity	DAILY WORK PERFORMED
	J-1	Mobilization/Demobilization	LS	1	
	J-2	Partnering	Day	1	
	K-1	Motor Grader w/Ripper	Hour	30	
	K-2	Track Dozer w/Ripper	Hour	100	
	K-3	Scraper	Hour	120	
	K-4	End Dump Truck	Hour	30	
	K-5	Tracked Excavator w/Hydraulic Thumb	Hour	120	
	K-6	Track Excavator w/9500 Ft-lbs Hydraulic Hammer	Hour	100	77 1004 (500)004 (700)
	K-7	Excavation	CY	900,500	
	K-8	Basement Backfill	LS	1	
	K-9	Finish Grading	Acre	57.0	
	K-10	Topsoil/Coversoil	СҮ	29,000	
	L-1	Dewatering	Million Gallons	28	
	M-1	Erosion Control Sediment Logs	LF	2,950	
	M-2	Fabric Sediment Fence	LF	400	
	N-1	Pre-ripping	Acre	63.0	
	N-2	Fertilizing	Acre	63.0	
	N-3	Composted Manure	Acre	63.0	
	N-4	Agricultural Disking	Acre	63.0	
	N-5	Mycorrhizal Fungi Inoculating	Acre	63.0	
	N-6	Pitting and Seeding	Acre	63.0	
	0-1	Miscellaneous Force Account	Force Account	50,000	
	Q-1	Wire Fence	LF	5,800	
1	Q-2	Grouse Flight Diverters	Panei	350	

# ACCIDENT/INCIDENT REPORTING FORM



<b>General</b>	Information

Incident Type:	Iı	ncident	Near Miss				
Primary Incident Type	Injury/Illness 🗌	Motor Vehicle Accident 🗌	Property / Equipment Damage 🗌				
	Environmental 🗌	Exposure	Other				
Occurrence Date:		Occurrence Time:		AM DPM			
Date Reported:		Time Reported		AM PM			
Reported By:			Telephone:				
Occurrence Location:			On Site:	Off Site:			
Stop Work Involved:	Yes No	SSE Involved:	Yes	No 🗌			
Police Notified:	N/A	Yes	No 🗌				
Transportation to medic	al facility:	N/A	Yes	No 🗌			
If yes, provide the following	Facility Name:						
Medical treatment recei	ved:	N/A	Yes	No 🗌			
Description of Incident:							

Individuals involved (Company Employee, Subcontractor Employee, Client Employee, Member of the Public, Witnesses)

Name	Organization	Title	Telephone

### Vehicle Incident Details:

Check any that apply:	Company Vehicle Involved				Non-Company Vehicle Involved 🗌			
Vehicle Information:	Vehicle #:			Vehicle VIN:				
	License Plate #:			Vehic	e Make/Model:			
	Vehicle Year			Vehic	e Color:			
	If Rental Vehicle, F	Rental Company	:					
	# of Passengers:			Names	s:			
Driver Information	First Name:			Last N	lame:			
	Address:							
	City			State:		Zip Code:		
	Phone # 1:			Phone	# 2:			
	License Plate #:			Vehic	e VIN:			
	Vehicle Year			Vehic	e Make/Model:			
	Vehicle Color:			Drive	License #:			
	# of Passengers:			Names	s:			
	Insurance Company	ıy:				Phone:		
	Insurance Agent:					Phone:		
	Policy #					Exp. Date:		
Details:	Weather:	Clear	Rain		Fog 🗌	Wind 🗌	Other	
	Road Condition:	Clear	Wet		Icy	Debris 🗌	Other	
	Light Condition:	Dawn 🗌	Day		Dusk 🗌	Dark 🗌		
	Estimated Speeds					_		
Attending Police:	Office Name:				Badge #:			
	Division:				Phone #			
Tow Truck Operator:	Company:				Phone #:			
	Drivers Name:							
	Address Towed To	):						
Citation Issued:	Yes	No 🗌						

## Accident/Incident Investigation Report

Diagram: include streets, traffic controls, visual obstacles, etc.



Vehicle 1

Vehicle 2



Accident/Incident Investigation Report

<u>Environmen</u>	tal/Exposure Inci	dent Details:					
Agent:	Chemical/Subs	tance	Explosion	Noise [		Radiation	Vibration
Medium:	Air 🗌	Soil	Ground Water	]		Surface Water	
Effect On:	People	Vegetation	Animals	Structur	es 🗌	Equipment 🗌	Materials
Substance Ir	nformation:						
Name of Sub	ostance				Amour	nt	Unit of Measure
PPE Worn:	Yes	No 🗌					
List PPE:							
Response De	etails:						
Initi If m Coo	H&S Team Risk Manage Project Mana Supervisor Client (as din Site Manage nedical treatment in Contact Wor ordinate drug/alcol	ulance, 911 (if appl ement ager (PM) rected by the PM) rs (as directed by th s needed: kCare at (888) 449- nol testing within 3	e PM) -7787	ed investig	ation iter	ns for submittal to	the H&S Team.

If after hours, contact the Safety Response number at (307) 755-4888.