



Appendix F

Level 1 Hydrology Protocol Results
for Martin Canyon Drainage

Cover Sheet
Hydrology Protocol Use Attainability Analysis
for an Ephemeral Stream¹

Stream Name:	Basin:	8-digit HUC:
Martin Canyon-Drainage	Mimbres	13030202
Reach Description:	Upstream lat/long:	Downstream lat/long:
See additional comments section	32.75402/-108.07157	32.69267/-108.04256
Current WQS		Assessment Unit ID:
<input checked="" type="checkbox"/> Unclassified 20.6.4.98 or 99 NMAC <input type="checkbox"/> Classified 20.6.4. ____ NMAC		MC-11, MC-12, MC-13

Reach Evaluation (How homogeneity of reach hydrology was verified)	
Methods Used:	Aerial photos, "ground truthing", drainage profiles, reconnaissance
Reasoning:	Why is the stream homogeneous? See report section 4.2.1

Hydrology Protocol Results		Notes
MC-11 (lat/long): 32.75402/-108.07157	<input checked="" type="checkbox"/> eph <input type="checkbox"/> int <input type="checkbox"/> per	Final score: 2, see field form and photos for additional information
MC-12 (lat/long): 32.72621/-108.05658	<input checked="" type="checkbox"/> eph <input type="checkbox"/> int <input type="checkbox"/> per	Final score: 2, see field form and photos for additional information
MC-13 (lat/long): 32.69267/-108.04256	<input checked="" type="checkbox"/> eph <input type="checkbox"/> int <input type="checkbox"/> per	Final score: 2, see field form and photos for additional information
<input type="checkbox"/> Additional location results attached.		

Hydroclimatic Conditions		If "yes" please describe.
Drought (SPI Value < - 1.5)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Recent Rainfall (within 48 hours)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Gauge data available?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
If yes for any of above, please explain why these conditions do not impact the UAA conclusion that <i>natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use:</i>		

Hydrologic and Other Modifications		If "yes" please describe.
Dam/diversion	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Channelization/roads	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Groundwater pumping	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Agricultural return flows	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	

¹ This form is designed for the expedited UAA process for ephemeral waters described in Subsection C of 20.6.4.15 NMAC.

Hydrologic and Other Modifications		If "yes" please describe.
Existing point source discharge	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Planned point source discharge	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Other modifications e.g., land use practices	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<i>Please explain hydrologic impact</i>
If yes for any of above, please explain why these modifications do not alter the uses supported by the natural flow regime:		

Current Uses Observed		If "yes" please describe.
Macroinvertebrates	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Fish	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
Recreation (contact use)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
If yes for any of the above, please explain why these observed uses are consistent with the UAA conclusion that 101(a)(2) aquatic life and recreational uses are not feasible:		

Additional Comments:
<p>Three assessment units were identified within the Martin Canyon sub-watershed (Figure F-1 below). Starting at the upstream end, these assessment units are identified as MC-11, MC-12 and MC-13. The most upstream assessment unit (MC-11) was selected to represent the headwater portions of this sub-watershed. Assessment unit (MC-12) was located in a flatter gradient section with more prominent vegetation. The lower downstream assessment unit (MC-12) was selected to capture the entire basin drainage area.</p> <p>As shown in the plan and profile plot presented below the basin slope progressively decreases, as expected, in the downstream direction. The upstream reaches of the Martin Canyon sub-watershed (MC-11) is a bedrock and cobble dominated stream channel (Photos MC11-1 and MC11-3) whereas the middle assessment unit (MC-12) is predominantly boulders, gravel, and sand (Photos MC12-1 and MC12-3) and the downstream assessment unit (MC-13) is a mixture of cobble and unconsolidated sand (Photos MC13-1 and MC13-3). The downstream assessment units reflect riverine processes. However, despite the influence of riverine processes within the lower assessment units seen throughout the Martin Canyon sub-watershed the channel is dominated by sand and cobble with very little difference between the "riparian" and upland vegetation. At all the assessment units we observed that rooted upland plants occurred, with varying degrees of density, throughout the stream channel. The weight of evidence clearly indicates that the Martin Canyon sub-watershed is an ephemeral channel that flows only in direct response to significant rainfall events.</p> <p>Based on comments received from NMED, Chiricahua Leopard Frog (CLF) tadpoles have been historically documented in pools along portions of the Martin Canyon drainage, although no official USFWS habitat designation has been made for any portion of Martin Canyon, and CLF frogs have not been documented in any portion of Martin Canyon during more recent surveys (Jennings, 2007). Evidence of pools were not observed during the Level 1 field evaluation; however, based on comments received from NMED regarding historic observations of CLF in Martin Canyon, a formal classification or re-classification of Martin Canyon is not currently proposed</p>

ATTACHMENTS:

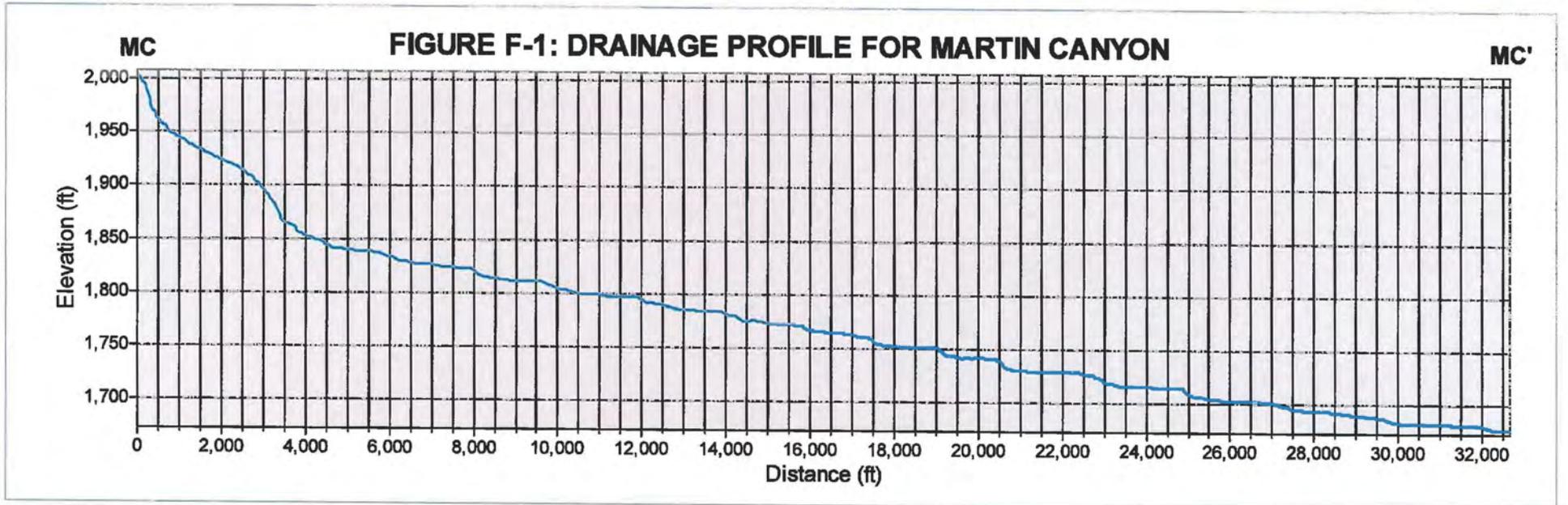
- Map and Photos (required)
- Hydrology Protocol Field Sheets for all locations (required)
- Level 2 Analysis (optional)
- Additional sites and/or documentation (drainage profile and plan view)

CONCLUSION:

This UAA concludes that the stream reach identified above is ephemeral and that Clean Water Act Section 101(a)(2) aquatic life and recreational uses are neither existing nor attainable due to the factor identified in 40 CFR 131.10(g)(2): *natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent.* Based on this conclusion, we recommend that the designated uses and criteria identified in 20.6.4.97 NMAC be applied to this stream reach in accordance with the expedited UAA process set forth in Subsection C of 20.6.4.15 NMAC.

Submitted by:	
Signed: _____	Date: _____
Surface Water Quality Bureau concurs with recommendation. <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If no, see attached reasons.</i>	
Signed: _____	Date: _____
EPA Region 6 technical approval granted. <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If no, see attached reasons.</i>	
Signed: _____	Date: _____

* Ephemeral classification is not proposed at this time in Martin Canyon because of potential Chiricahua Leopard Frog (CLF) breeding habitat based on comments received from NMED, as described in the additional comments section of this cover letter.



Martin Canyon Photographs (MC-11 Reach) – Total HP score of 2 (ephemeral stream)



MC11-1: Photographic reference for indicators 1.1 through 1.6. Indicator 1.6 scored as 1. Vegetation in the channel bed is consistently dispersed throughout the streambed between the boulders and where deposition of finer grained material has occurred. No water or biotic indicators of water observed along survey reach.



MC11-2: Photographic reference for indicator 1.5. Photograph of the bank and upland area. Indicator 1.5 scored as 1. Vegetation is similar in composition with some slight variation in density between the bank and the upland area.

Martin Canyon Photographs (MC-11 Reach) – Total HP score of 2 (ephemeral stream)



MC11-3: Photographic reference for indicators 1.5 and 1.6. Photographs of the bank/upland area and rooted in channel vegetation. Vegetation is similar in composition between the bank and the upland area. Vegetation is consistently dispersed throughout the channel.

Martin Canyon Photographs (MC-12 Reach) – Total HP score of 2 (ephemeral stream)



MC12-1: Photographic reference for indicators 1.1 through 1.6. No water or biotic indicators of water observed along survey reach. Channel bed material is predominantly boulders and sand and gravel.



MC12-2: Photographic reference for indicator 1.6. Instream and bank vegetation shown. Indicator 1.6 scored as 1. Vegetation in channel is predominantly grasses and shrub species and are consistently dispersed throughout the channel.

Martin Canyon Photographs (MC-12 Reach) – Total HP score of 2 (ephemeral stream)



MC12-3: Photographic reference for indicator 1.5. Indicator 1.5 scored as 1. Upland vegetation is similar to what is observable along the banks and within the streambed (previous photograph). Density decrease slightly with distance from the stream but composition is similar.

Martin Canyon Photographs (MC-12 Reach) – Total HP score of 2 (ephemeral stream)



MC12-4: Photographic reference for indicators 1.5 and 1.6. Photographs of the bank/upland area and rooted in channel vegetation. Vegetation is similar in composition between the bank and the upland area. Vegetation is consistently dispersed throughout the channel.

Martin Canyon Photographs (MC-13 Reach) – Total HP score of 2 (ephemeral stream)



MC13-1: Photographic reference for indicator 1.1 through 1.6. Indicator 1.6 scored as 1. Rooted vegetation within the channel consists of grasses which are dispersed throughout the streambed. No water or biotic indicators of water observed along survey reach.



MC13-2: Photographic reference for indicator 1.5. Photograph of the overbank and upslope area. Indicator 1.5 scored as 1. Vegetation in the upslope area is similar to the vegetation along the banks and within the channel observed in the previous photograph. Minimal differences in density are observable. No distinct riparian zone exists.

Martin Canyon Photographs (MC-13 Reach) – Total HP score of 2 (ephemeral stream)



MC13-3: Photographic reference for indicators 1.5 and 1.6. Photographs of the bank/upland area and rooted in channel vegetation. Vegetation is similar in composition between the bank and the upland area. Vegetation is consistently dispersed throughout the channel.

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Date: 6/14/2011		Stream Name: Martin Canyon	Latitude: N 32.75572
Evaluator(s): Fulton/Donohoe		Site ID: MC-11	Longitude: W 108.07136
TOTAL POINTS: 2 <i>Minimum Level 1 total intermittent is ≥ 12</i>		Assessment Unit: Martin Canyon Drainage (MC-11)	Drought Index (12-mo. SPI Value): -1.1
WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	Has there been a heavy rain in the last 48 hours? ___ YES ___ X ___ NO
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover <input checked="" type="checkbox"/> clear/sunny	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover <input checked="" type="checkbox"/> clear/sunny	**Field evaluations should be performed at least 48 hours after the last known major rainfall event. OTHER: Stream Modifications ___ YES ___ X ___ NO Diversions ___ YES ___ X ___ NO Discharges ___ YES ___ X ___ NO **Explain in further detail in NOTES section

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs. 6	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow. 4	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc) 2	Dry channel. No evidence of base flows was found. 0
1.2. Fish	Found easily and consistently throughout the reach. 3	Found with little difficulty but not consistently throughout the reach. 2	Takes 10 or more minutes of extensive searching to find. 1	Fish are not present. 0
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach. 3	Found with little difficulty but not consistently throughout the reach. 2	Takes 10 or more minutes of extensive searching to find. 1	Macroinvertebrates are not present. 0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach. 3	Found with little difficulty but not consistently throughout the reach. 2	Takes 10 or more minutes of extensive searching to find. 1	Filamentous algae and/or periphyton are not present. 0
1.5. Differences in Vegetation	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach. 3	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach. 2	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two. 1	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands. 0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg. 3	There are a few rooted upland plants present within the streambed/thalweg. 2	Rooted upland plants are consistently dispersed throughout the streambed/thalweg 1	Rooted upland plants are prevalent within the streambed/thalweg. 0
SUBTOTAL (#1.1 – #1.6)				2

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio = 1.0. Stream is completely straight with no bends.
	3	2	1	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain.	Ratio between 1.2 and 2.5. Stream is moderately confined. Floodplain is present, but may only be active during larger floods.	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	3	1.5	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools <u>or</u> of riffles.	There is no sequence exhibited.
	3	2	1	0
SUBTOTAL (#1.1 – #1.9)				2
<p>If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL. If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.</p>				
1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.	
	3	1.5	0	
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are <u>not</u> found within the study reach.	
	Present = 3		Absent = 0	
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	0.5	0
TOTAL POINTS (#1.1 – #1.12)				2

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perenniality. <u>If the indicator is present</u> record score below and tally with previous score to compute TOTAL.				
1.13. Seeps and Springs	Seeps and springs are found within the study reach.		Seeps and springs are <u>not</u> found within the study reach.	
	Present = 1.5		Absent = 0	
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.		Iron-oxidizing bacteria and/or fungi are <u>not</u> found within the study reach.	
	Present = 1.5		Absent = 0	
TOTAL <i>plus</i> SUPPLEMENTAL POINTS (#1.1 – #1.14)				2

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Date: 6/14/2011	Stream Name: Martin Canyon	Latitude: N 32.72621
Evaluator(s): Fulton/Donohoe	Site ID: MC-12	Longitude: W 108.05658
TOTAL POINTS: 2 <i>Stream is at least intermittent if ≥ 12</i>	Assessment Unit: Martin Canyon Drainage (MC-12)	Drought Index (12-mo. SPI Value): -1.1
WEATHER CONDITIONS	NOW: <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny	PAST 48 HOURS: <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny
	Has there been a heavy rain in the last 48 hours? ___ YES <input checked="" type="checkbox"/> NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event. OTHER: Stream Modifications <input checked="" type="checkbox"/> YES ___ NO Diversions ___ YES <input checked="" type="checkbox"/> NO Discharges ___ YES <input checked="" type="checkbox"/> NO **Explain in further detail in NOTES section	

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs.	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc)	Dry channel. No evidence of base flows was found.
	6	4	2	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	0
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	2	1	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	2	1	0
1.5. Differences in Vegetation	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	3	2	1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg.	There are a few rooted upland plants present within the streambed/thalweg.	Rooted upland plants are consistently dispersed throughout the streambed/thalweg	Rooted upland plants are prevalent within the streambed/thalweg.
	3	2	1	0
SUBTOTAL (#1.1 – #1.6)				2

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
 If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio = 1.0. Stream is completely straight with no bends.
	3	2	1	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain.	Ratio between 1.2 and 2.5. Stream is moderately confined. Floodplain is present, but may only be active during larger floods.	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	3	1.5	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools <u>or</u> of riffles.	There is no sequence exhibited.
	3	2	1	0
SUBTOTAL (#1.1 – #1.9)				2
<p>If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL. If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.</p>				
1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.	
	3	1.5	0	
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are <u>not</u> found within the study reach.	
	Present = 3		Absent = 0	
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	0.5	0
TOTAL POINTS (#1.1 – #1.12)				2

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perennality. <u>If the indicator is present</u> record score below and tally with previous score to compute TOTAL.				
1.13. Seeps and Springs	Seeps and springs are found within the study reach.		Seeps and springs are <u>not</u> found within the study reach.	
	Present = 1.5		Absent = 0	
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.		Iron-oxidizing bacteria and/or fungi are <u>not</u> found within the study reach.	
	Present = 1.5		Absent = 0	
TOTAL <i>plus</i> SUPPLEMENTAL POINTS (#1.1 – #1.14)				2

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Date: 6/14/2011	Stream Name: Martin Canyon	Latitude: N 32.69267
Evaluator(s): Fulton/Donohoe	Site ID: MC-13	Longitude: W 108.04256
TOTAL POINTS: 2 <i>Stream is at least intermittent if ≥ 12</i>	Assessment Unit: Martin Canyon Drainage (MC-13)	Drought Index (12-mo. SPI Value): -1.1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	Has there been a heavy rain in the last 48 hours? ___ YES ___X___ NO
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover _X_ clear/sunny	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover _X_ clear/sunny	**Field evaluations should be performed at least 48 hours after the last known major rainfall event. OTHER: Stream Modifications ___ YES ___X___ NO Diversions ___ YES ___X___ NO Discharges ___ YES ___X___ NO **Explain in further detail in NOTES section

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs. 6	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow. 4	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc) 2	Dry channel. No evidence of base flows was found. 0
1.2. Fish	Found easily and consistently throughout the reach. 3	Found with little difficulty but not consistently throughout the reach. 2	Takes 10 or more minutes of extensive searching to find. 1	Fish are not present. 0
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach. 3	Found with little difficulty but not consistently throughout the reach. 2	Takes 10 or more minutes of extensive searching to find. 1	Macroinvertebrates are not present. 0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach. 3	Found with little difficulty but not consistently throughout the reach. 2	Takes 10 or more minutes of extensive searching to find. 1	Filamentous algae and/or periphyton are not present. 0
1.5. Differences in Vegetation	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach. 3	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach. 2	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two. 1	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands. 0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg. 3	There are a few rooted upland plants present within the streambed/thalweg. 2	Rooted upland plants are consistently dispersed throughout the streambed/thalweg 1	Rooted upland plants are prevalent within the streambed/thalweg. 0
SUBTOTAL (#1.1 – #1.6)				2

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio = 1.0. Stream is completely straight with no bends.
	3	2	1	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain.	Ratio between 1.2 and 2.5. Stream is moderately confined. Floodplain is present, but may only be active during larger floods.	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	3	1.5	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools <u>or</u> of riffles.	There is no sequence exhibited.
	3	2	1	0
SUBTOTAL (#1.1 – #1.9)				2
<p>If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL. If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL. YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.</p>				
1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.	
	3	1.5	0	
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are <u>not</u> found within the study reach.	
	Present = 3		Absent = 0	
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	0.5	0
TOTAL POINTS (#1.1 – #1.12)				2

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perennality. If the indicator is present record score below and tally with previous score to compute TOTAL.				
1.13. Seeps and Springs	Seeps and springs are found within the study reach.		Seeps and springs are <u>not</u> found within the study reach.	
	Present = 1.5		Absent = 0	
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.		Iron-oxidizing bacteria and/or fungi are <u>not</u> found within the study reach.	
	Present = 1.5		Absent = 0	
TOTAL <i>plus</i> SUPPLEMENTAL POINTS (#1.1 – #1.14)				2

