

## Bower Environmental and Sustainable Technologies LLC

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September 15<sup>th</sup> 2015.

### Status Report.

**MGRI Cache Unit, Spill #2, REM #7787, SWSW Section 35, T35N, R20W, N PM.**

Monument Global Resources, Inc.,  
Operator#10430.  
Cache Unit, Montezuma County, Colorado.

### **Introduction**

The release location was from a surface pipeline. The pipeline was repaired previously and put back into operation. Remediation works was carried out and in-conjunction with Souder and Miller Associates and reported on MGRI Status reviews dated 09/13/2013 and 09/19/2015. On Aug 5<sup>th</sup> 2015 a supplementary form 27 was submitted and approved for further investigation and samples was obtained for assay on August 13<sup>th</sup> 2015.

Investigation was carried out to assess the level of impact and samples were retrieved and sent to GAL in Durango for analysis for a reduced Table 910-1 as COGGC REM #7787 document 2315151, 8/10/2015.

### **Site works.**

On August 13<sup>th</sup> 2015, BE@ST site personnel attending site to retrieve discreet samples of the previously impacted area from the release point and spill path, discreet samples was taken. Two samples was obtained on top of the Butte, one at the source point and one between the source and the edge of the butte. Samples was not taken through the rocky section from the edge of the butte to the run off path due to access and rocky nature of the topography. Samples was taken from the edge of the rocky section and every 300ft along the flow path from the base of the butte rocky section. Photographs was taken every 50ft along the flow path including the rocky section. GPS coordinates was recorded for all samples. The material for the samples was taken at approx. 6" to 1 ft. deep dependent on soil conditions and bedrock depth. The soil types is sandy/silty/gravel  
Site photographs was taken with a GPS capable camera (model Nikon S9300).

The samples taken was directly taken to Green Analytical Laboratories (GAL) in Durango, Colorado in GAL issued sampling media and cool storage.

#### **Sample Analytics.**

The soil samples were analyzed for a reduced table 910-1 constituent list as required under the form 27 COA.

Latest Analytical Results from GAL are summarized in table 1 below and appended.

GAL Report Cache Unit Spill #2.

SMA Status Report #5122434, Sept 13, 2013

SMA Status Update #5122434, Sept 19, 2013.

#### **Analytical Review.**

Soil Sample results demonstrates that further remediation works be completed in certain areas along the spill path. Sample for S2#2 upper shows elevated TPH and Arsenic.

Samples S2#3 Base Butte, S2#4 and S2#5 also have elevated TPH and As.

Arsenic falls with the locally elevated levels as recorded in the locality and previously submitted and cited under the documentation referenced below.

External References;

US Geological Survey PP1648, Geochemical Landscapes of the Conterminous United States, Nov 2001.

Arsenic Clean-up Criteria for Soils in the US and Abroad, Comparing Guidelines and Understanding Inconsistencies, Proceeding on the Annual International Conference on Soils, Sediments, Water and Energy: Vol. 15, Article 10.

#### **Reclamation Works Review.**

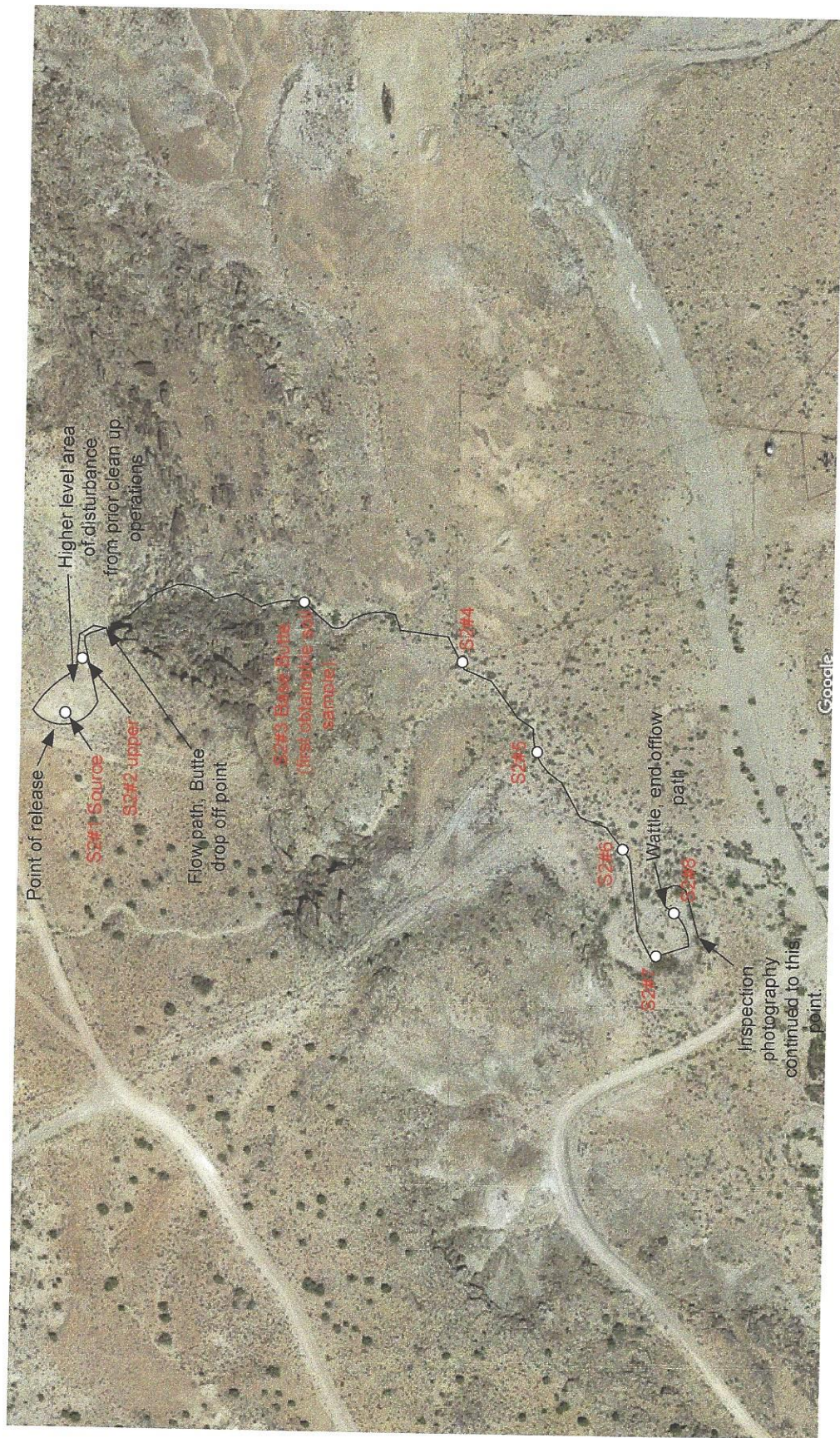
The samples on the table below show elevated TPH and will require further treatment in line with previous operations.

It is recommended that the area around sample point S2#2 Upper in a 10ft radius and east towards the Butte drop of point be scarified, sprayed with a mix of Simple green and High nitrogen fertilizer (as previous remediation method) and secondarily scarified to ensure good mixing.

The Area from the Base of the Butte (Sample point S2#3 Base Butte) for 600ft to S2#5 Sample point be treated as above and both area subsequently retested for residual hydrocarbons.

Within the Rocky area from the Butte drop off point to S2#3 base Butte was visually inspected around the rocks and underlying flow path where accessible, no surface soil was obtainable due to the bedrock being at surface, the path reveals no visible residual surface hydrocarbons or odors.

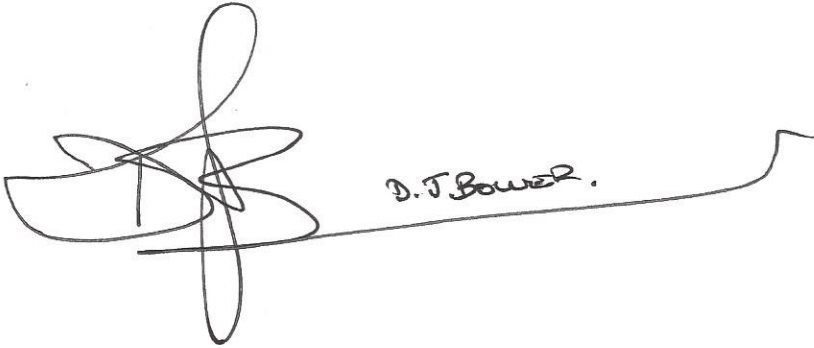
It is therefore not recommended to proceed with any works with the rocky area as access limited and safety of operatives would be a major concern. The area was previously sprayed with the previously proposed method as that appears to have removed any hydrocarbon issues in that area.



Spill Location #2 REM 7787 . Sample Locations



If there any questions, issues or related items regarding this report, please call David Bower at Bower Environmental and Sustainable Technologies LLC on (303) 720 8324 (cell) or (303) 621 2461 at any time, or via email as shown below.

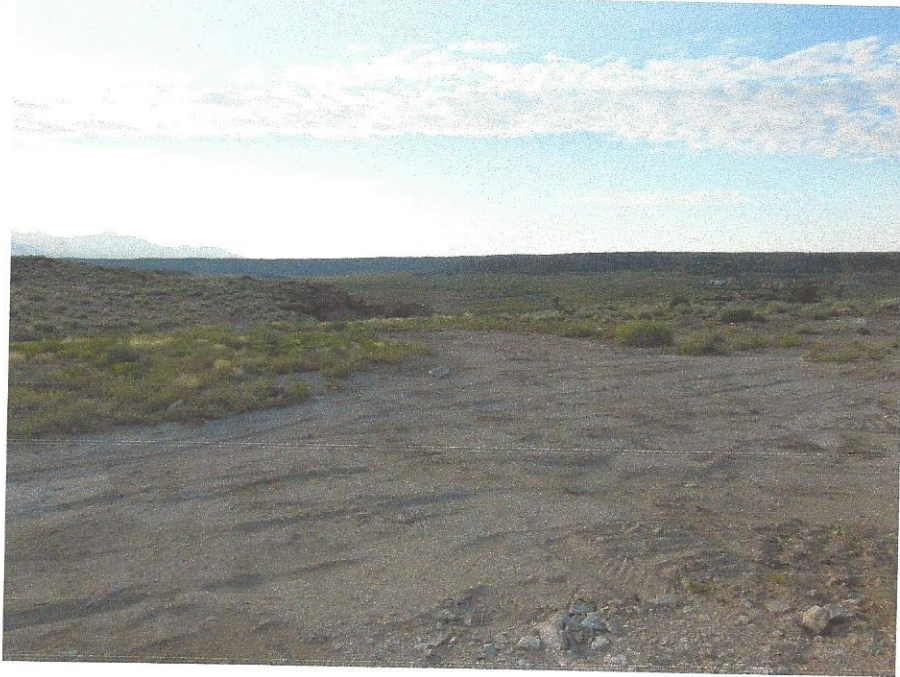
A handwritten signature in black ink, consisting of a large, stylized, scribbled initial 'D' followed by the name 'D. J. Bower' written in a cursive script.

David J Bower  
Principle Scientist  
Bower Environmental and Sustainable Technologies LLC  
[Bower.dj@gmail.com](mailto:Bower.dj@gmail.com)

Photographs below.

**Spill Area Pictures.**

From Source looking North East toward Butte edge



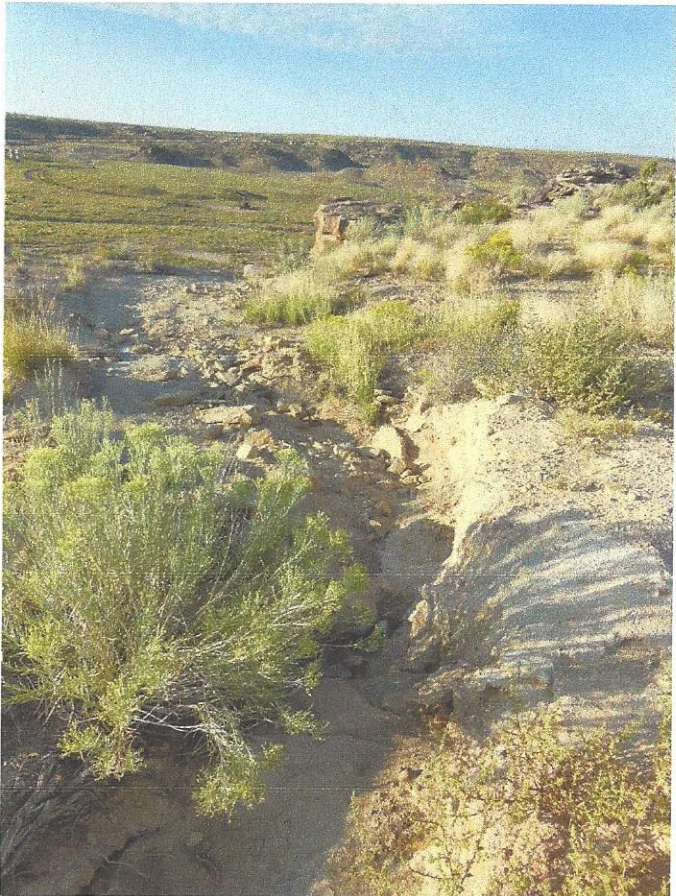
Source +50ft along spill path.



Source + 100ft along spill path.



+150ft towards top of Butte drop off

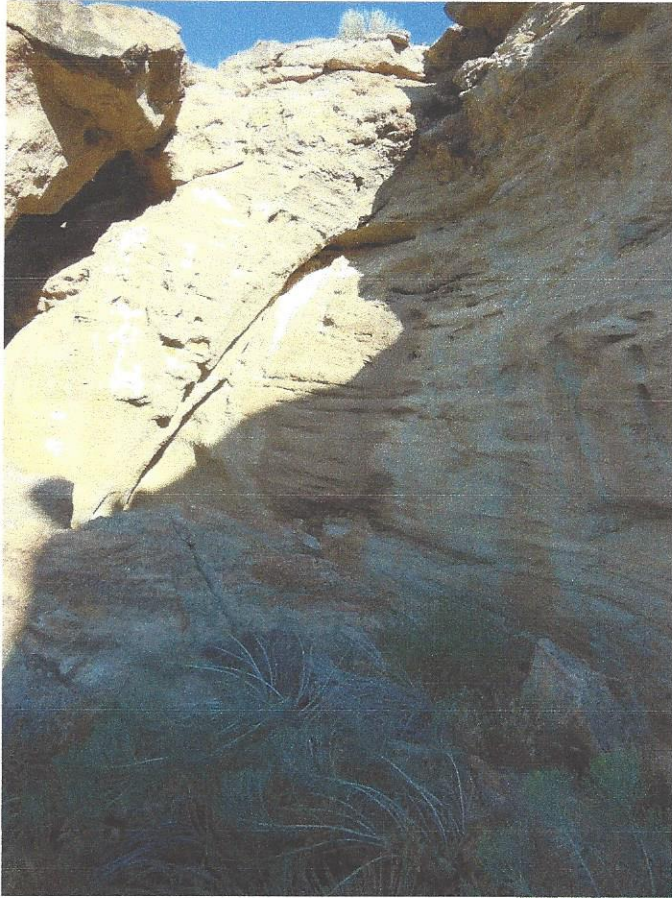


Looking down over edge of Butte into spill path

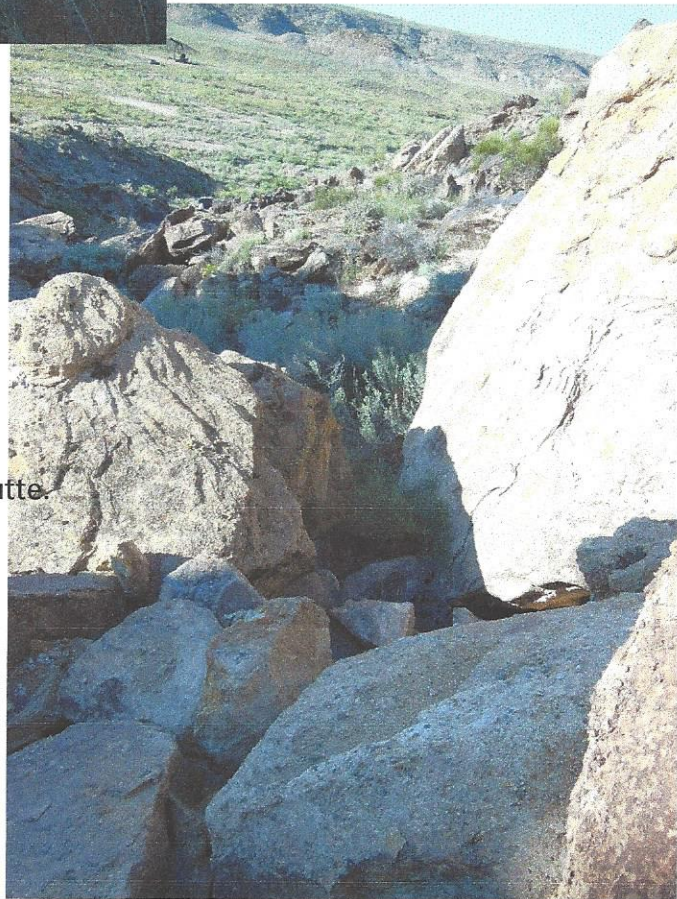


Edge of Butte looking south.

Looking North up to edge of Butte.



Looking South from lower section of Butte.



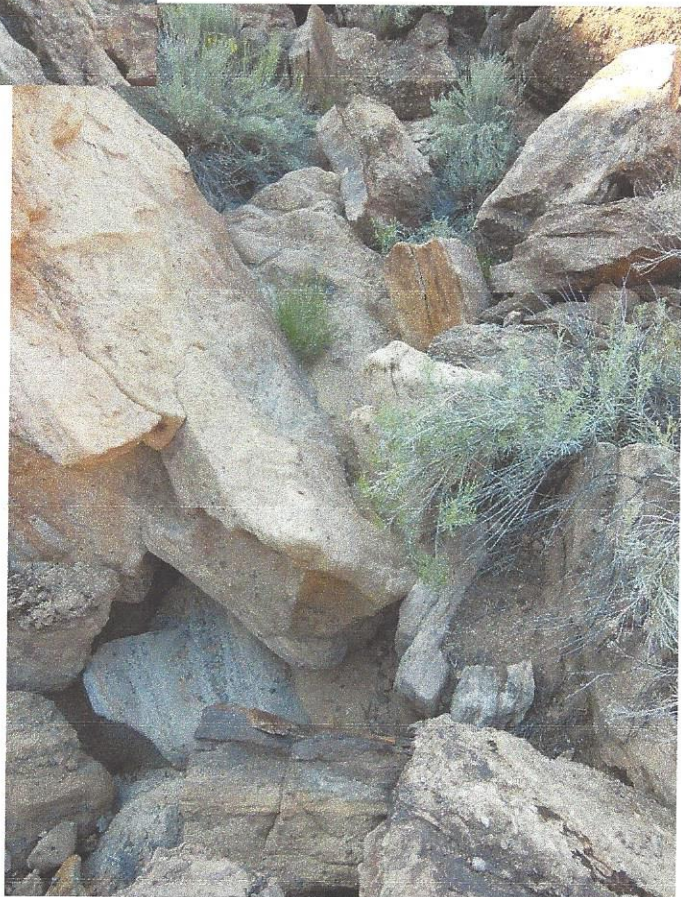
South +50ft from Butte



South +50 looking down between rocks.

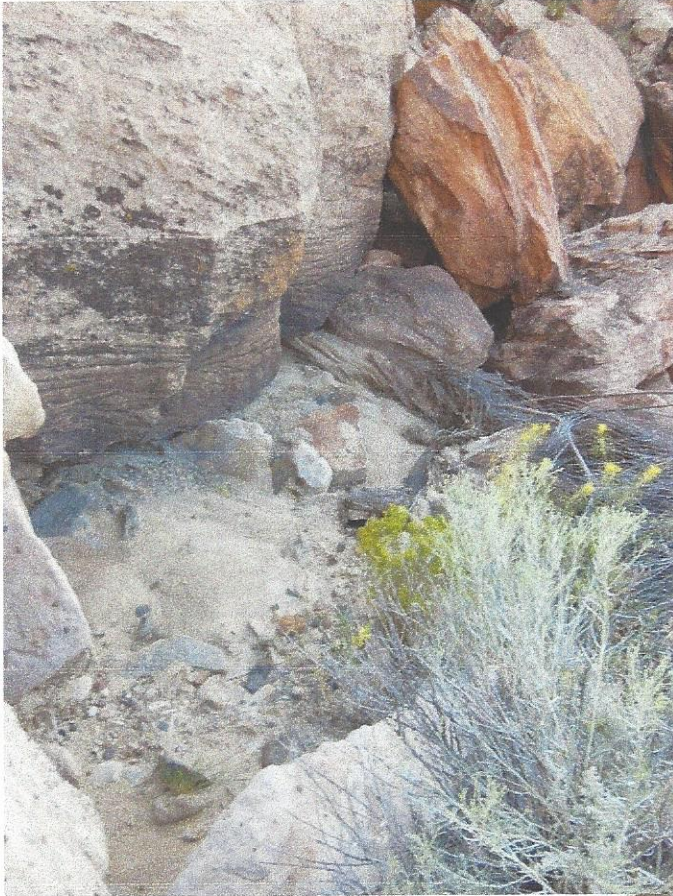


South + 100ft.



South +125ft

South +150ft looking down into spill path.



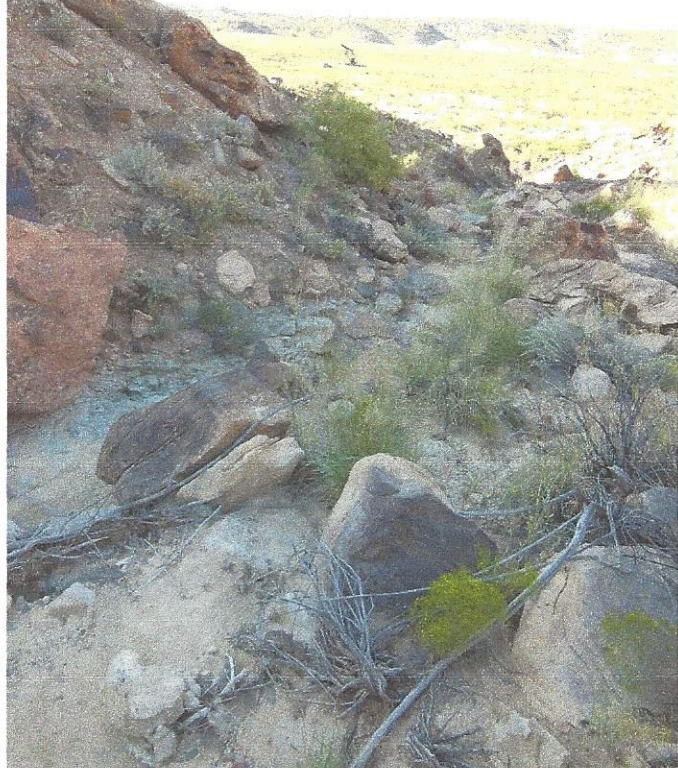
South + 175ft.



South +175 looking down.



South + 200ft



South + 250ft



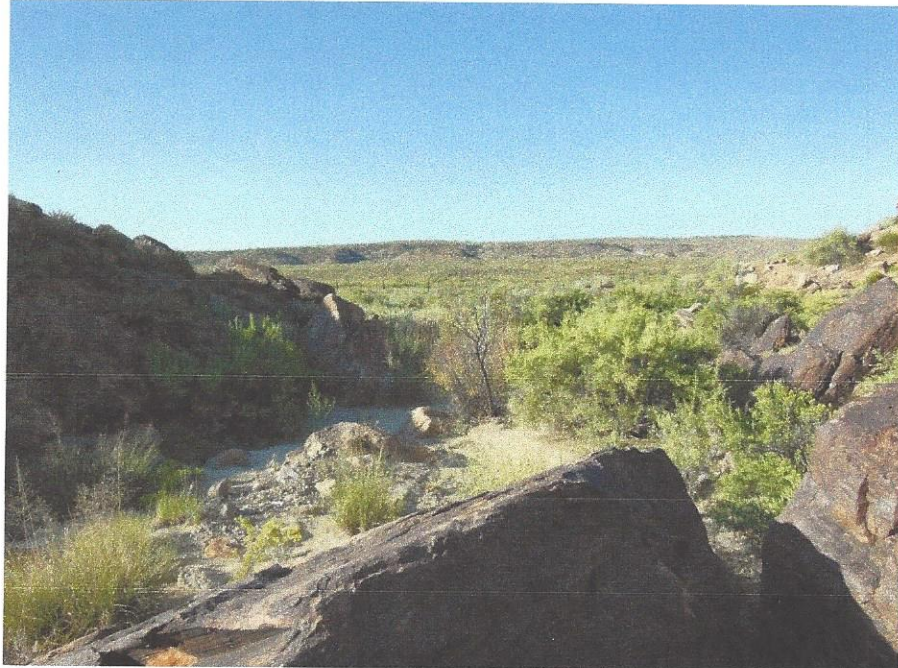
South +300ft into rocks.



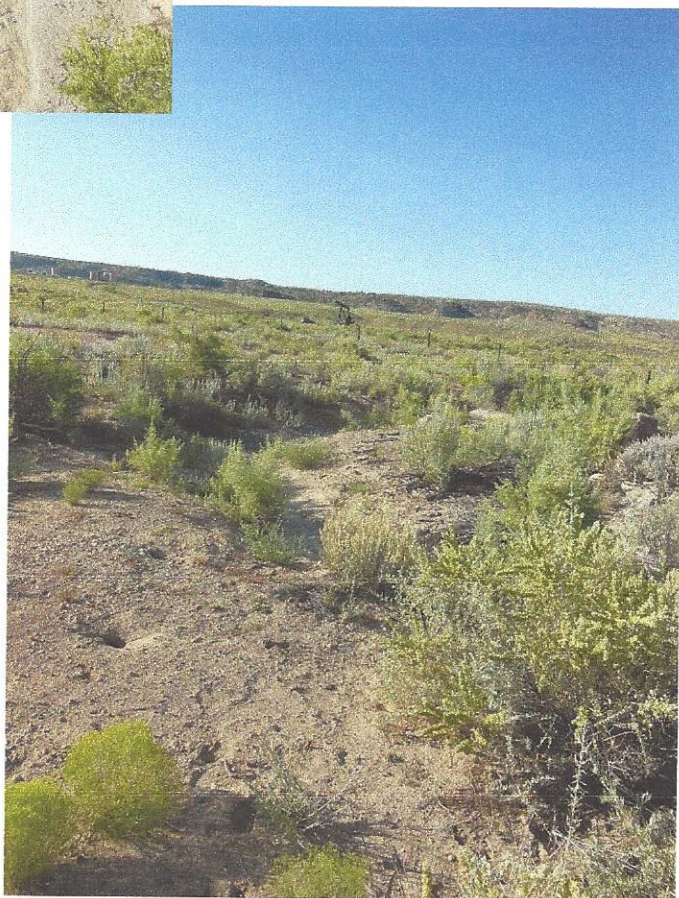
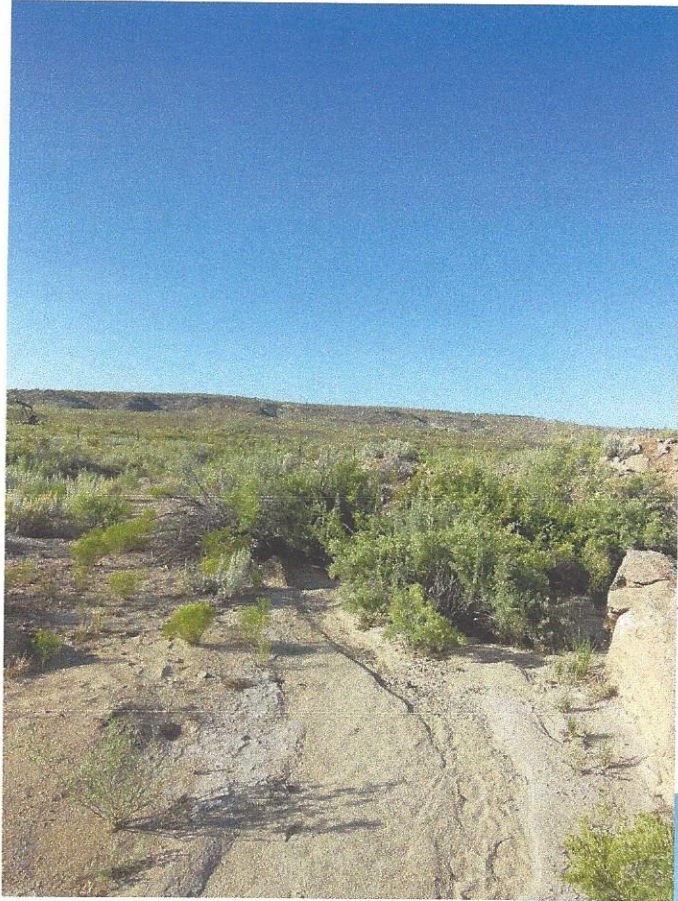
South + 350ft.



South +375ft along flow path.

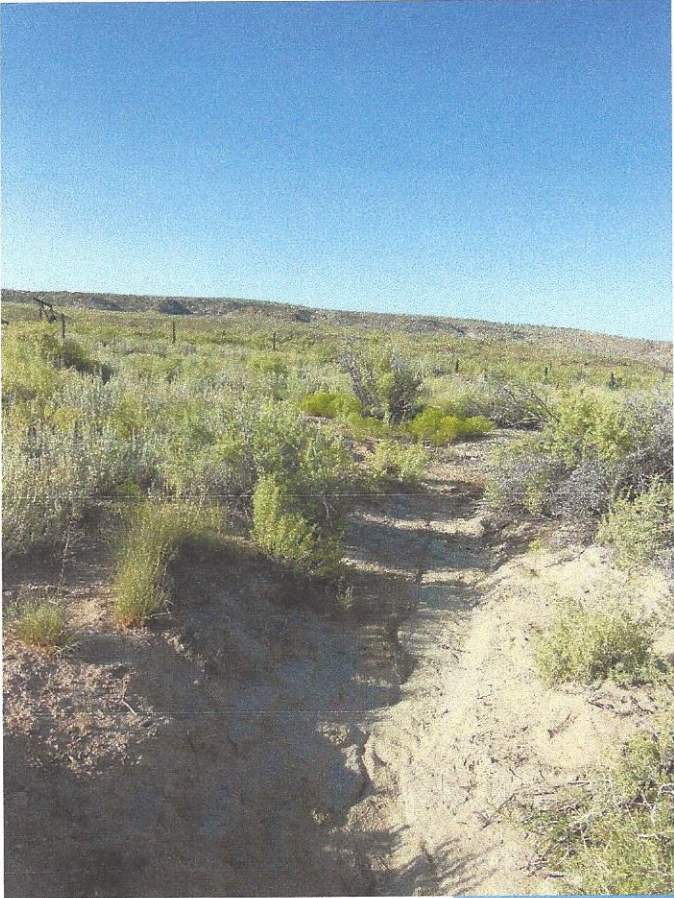


South +400ft. (out of outcrop and rocks)

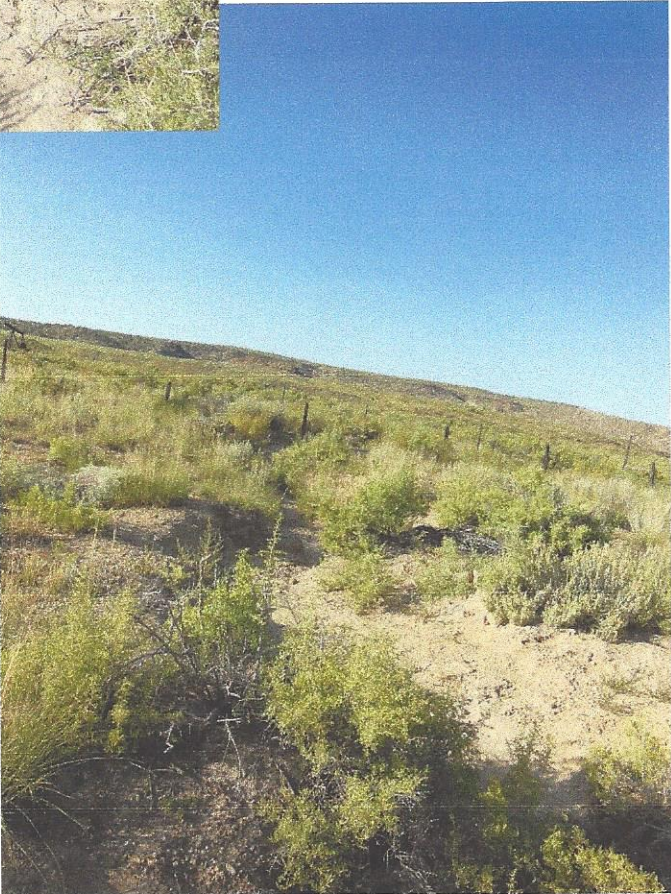


South of butte drop off +450ft

South + 500ft (flow path turning towards South West).



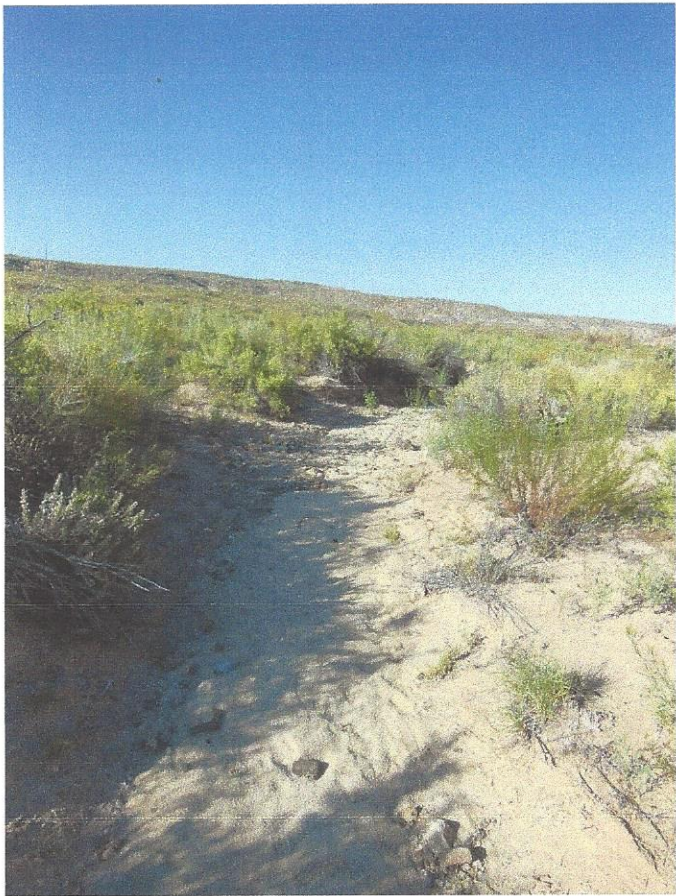
South +550ft.



South west + 600ft.



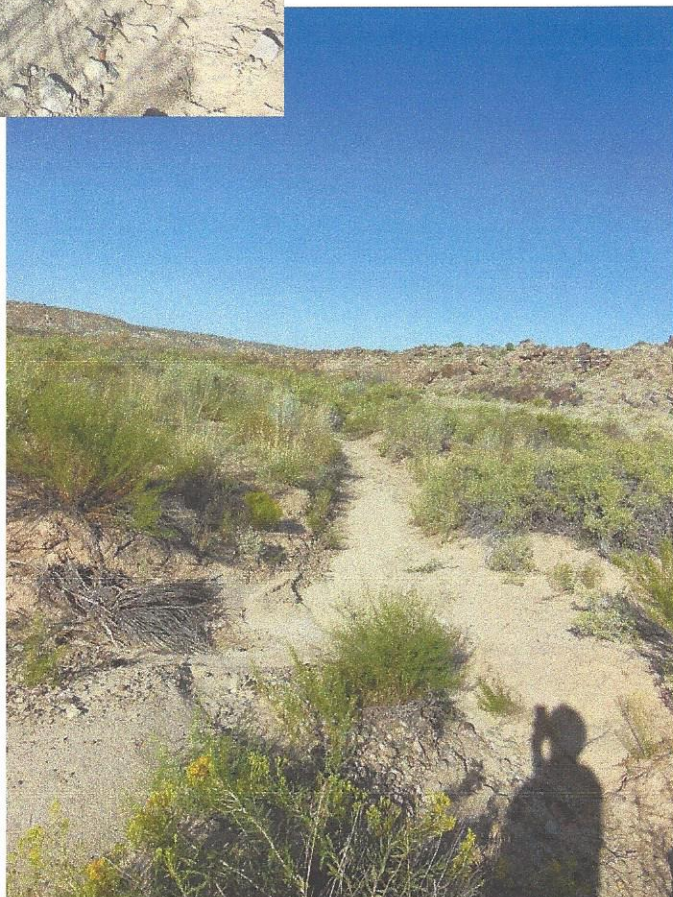
South West +650ft.



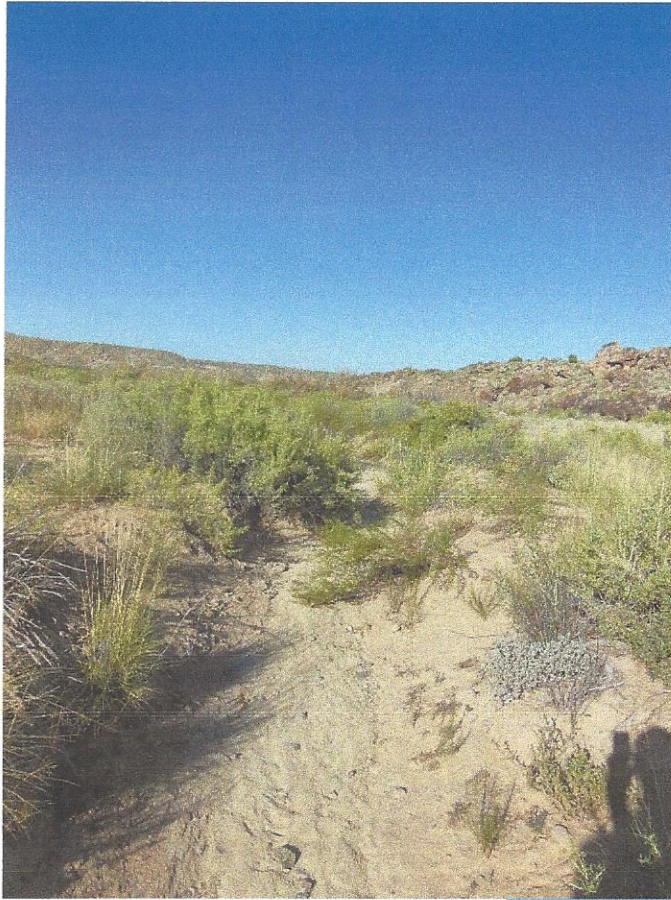
South Westerly +700ft



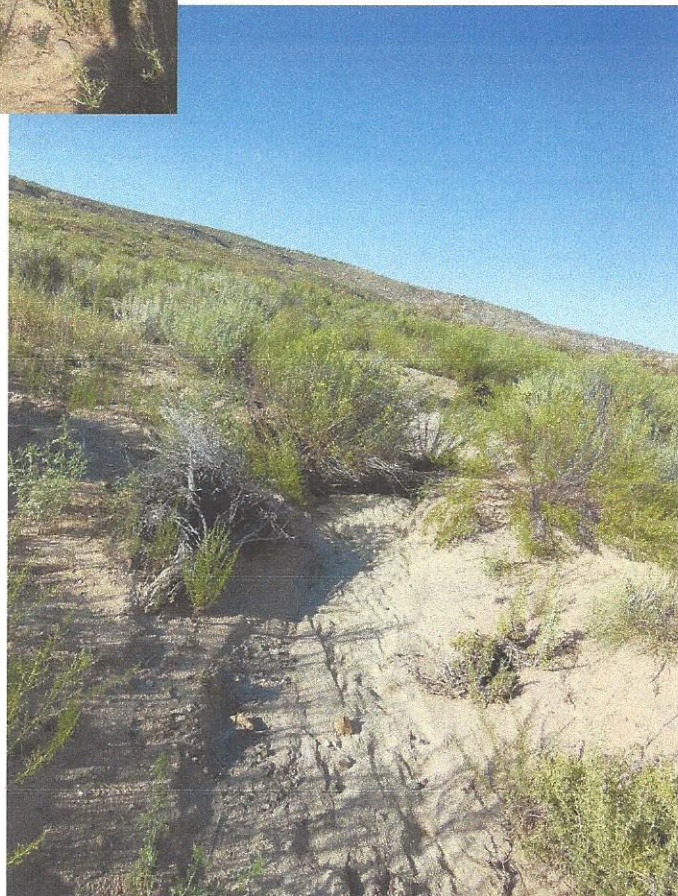
South +750ft.



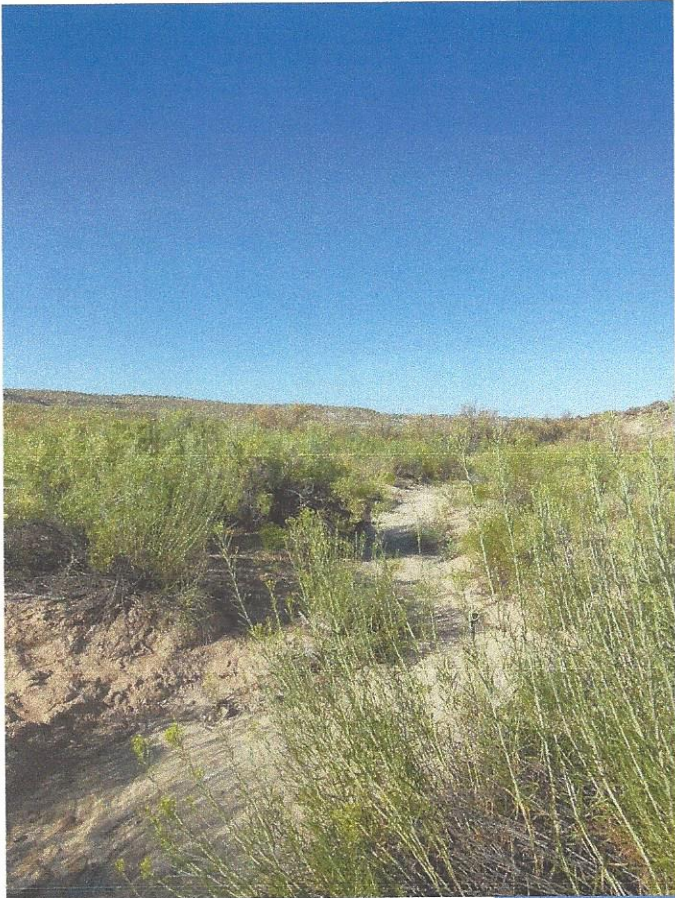
South West +800ft



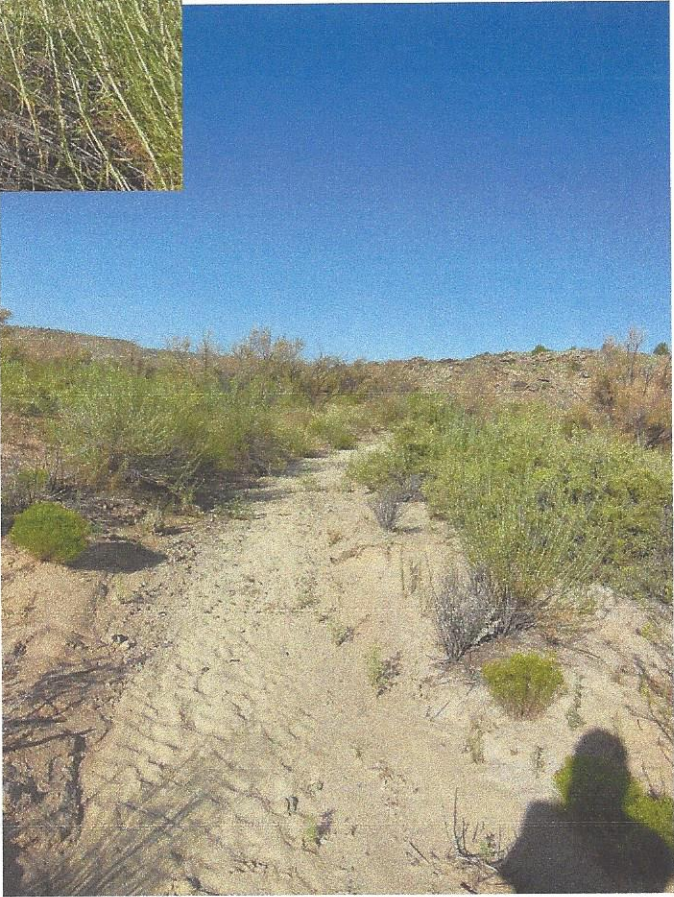
South West +850ft.



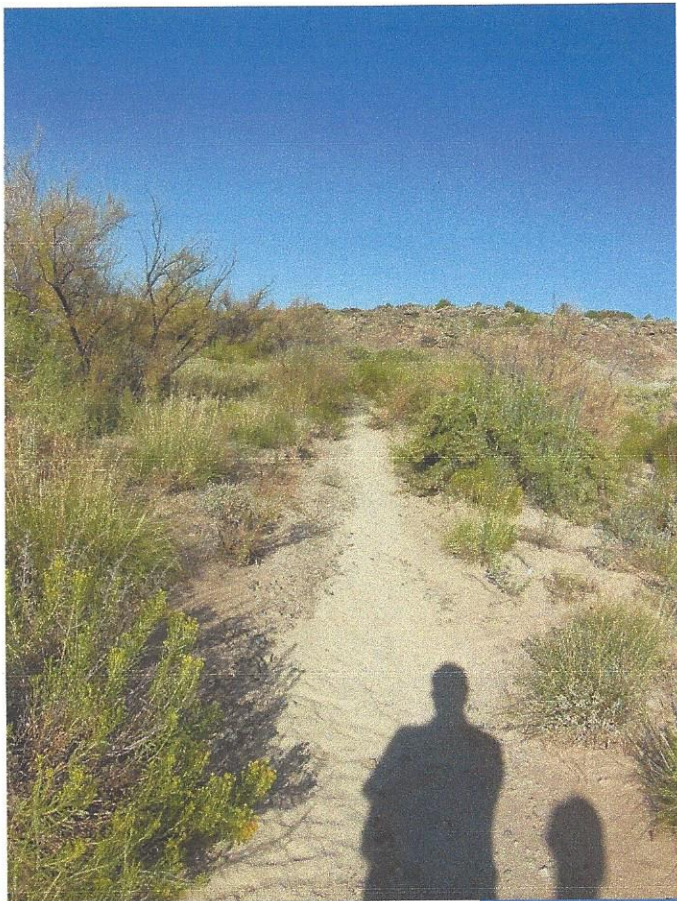
South west +900ft.



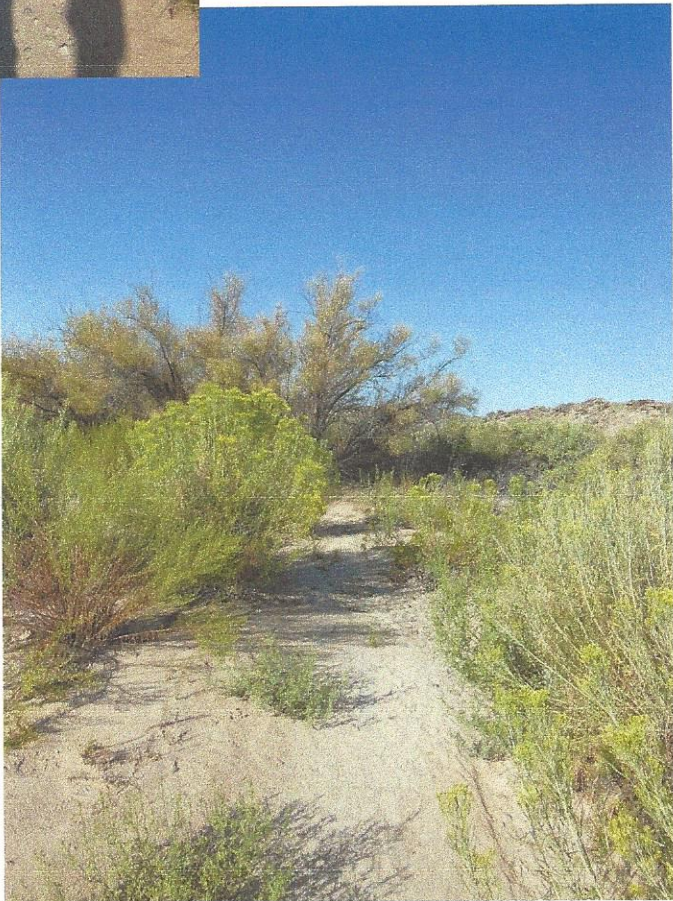
South West +950ft.



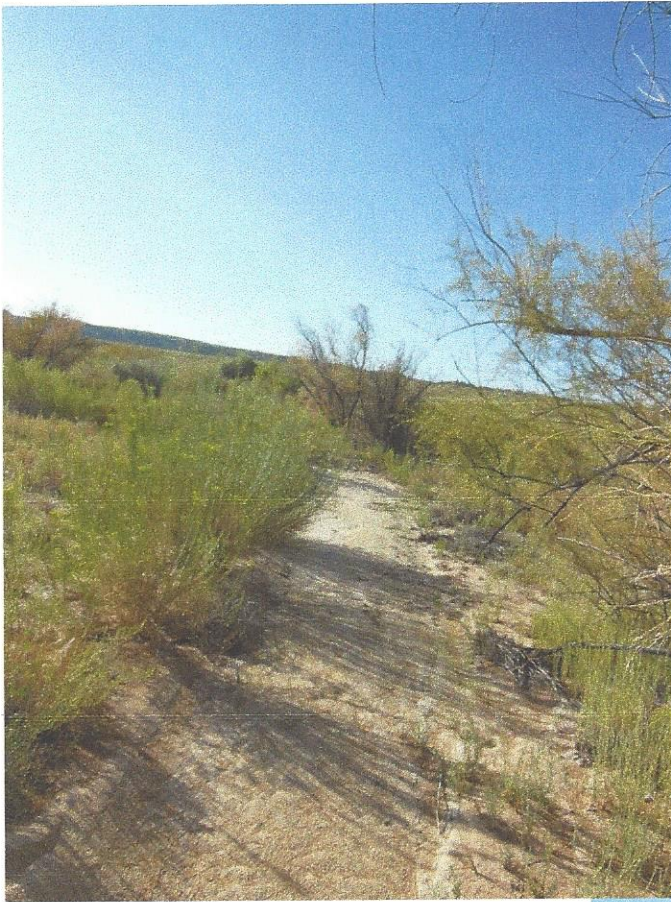
Flow path turns towards West +1000ft



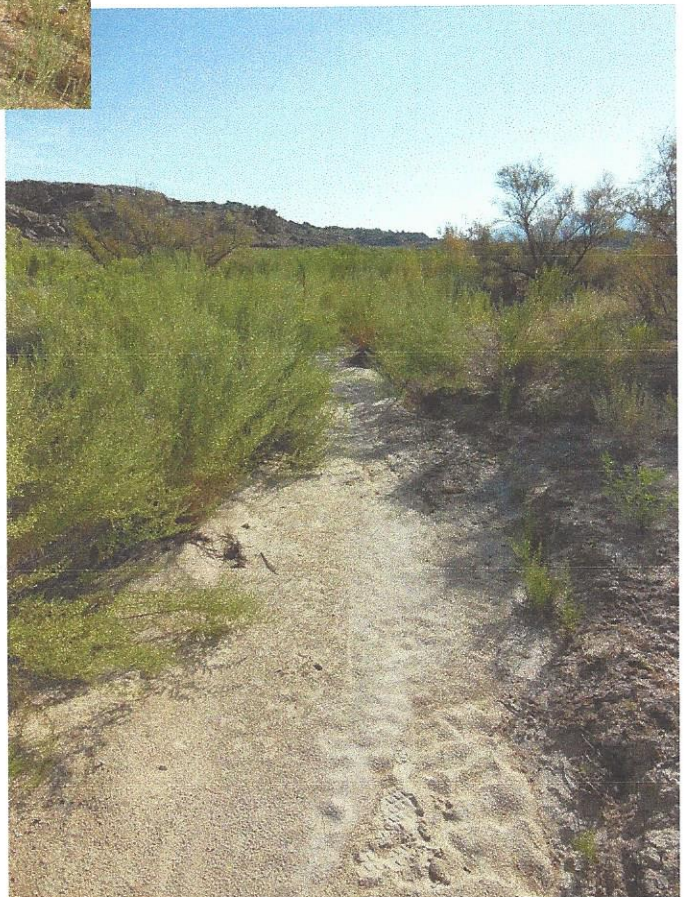
Westerly +1050ft.



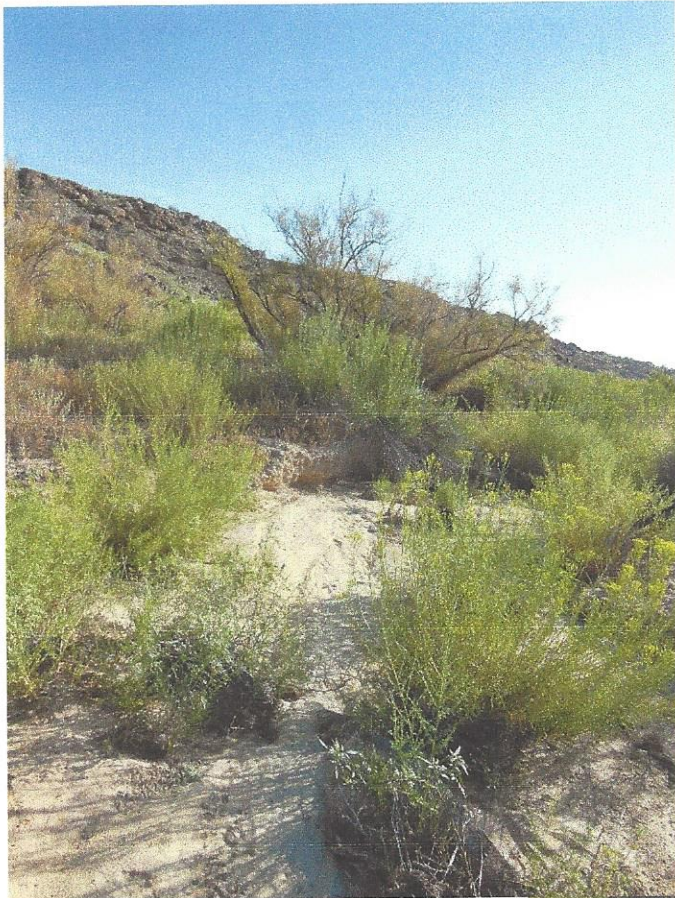
Flow path turns back south +1100ft.



Flow path turns South Easterly +1150ft.



Easterly along flow path +1200ft. At wattle end of spill, continued pic file beyond spill as reported distance longer on original form 27.



Surface Drainage after spill path + 1250ft.



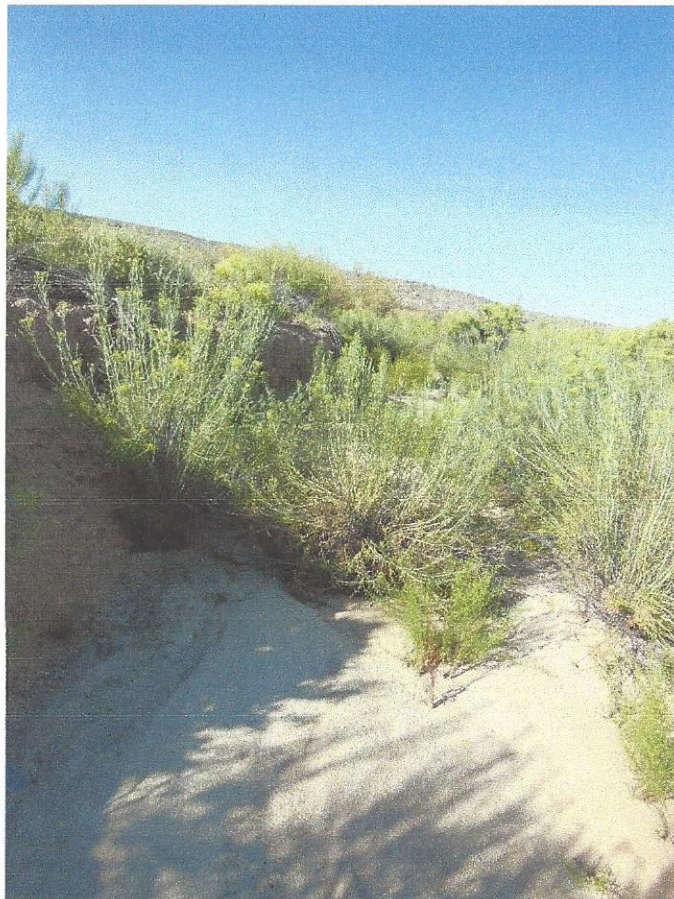
Surface Drainage +1300ft.



Surface Drainage +1350ft turns back to south west.



Surface Drainage +1400ft.



Surface Drainage +1450ft. End of pic file.

