



Via Electronic Delivery

September 14, 2015

Mr. David Mayerson  
Mining Environmental Compliance Section  
New Mexico Environment Department  
1190 St. Francis Dr.  
Santa Fe, NM

RE: DP-1717, Roca Honda Mine Rio San Jose Characterization

Dear Mr. Mayerson:

Attached is an interim report summarizing the results of recent water quality and sediment sampling in the Rio San Jose in Milan and Grants, New Mexico. A particularly wet summer with numerous heavy precipitation events prevented earlier completion of the characterization work. The report demonstrates that the segment of the Rio San Jose evaluated appears to be free of contaminants that could potentially become mobilized from discharge of treated water near Milan as planned. As noted in the report, Roca Honda Resources (RHR) is recommending some changes to the Work Plan previously approved by NMED based on experience gained during the characterization effort to date. We look forward to discussing those changes and the reported findings with NMED in the near future.

Please call Dan Kapostasy or me with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Michael Neumann". The signature is fluid and cursive.

Michael Neumann  
Manger, New Mexico Operations

cc: Mr. Kurt Vollbrecht, NMED  
Mr. David Clark, MMD  
Mr. Michael Mariano, NMSLO  
Mr. Jeff Peterson, NMOSE  
Mr. Mathew Wonder, NMDG&F  
Ms. Diane Tafoya, USFS  
Mr. Dan Kapostasy, RHR

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**INTERIM REPORT FOR FINDINGS OF WATER  
QUALITY AND SEDIMENT CHEMISTRY ALONG THE  
RIO SAN JOSE**

**ROCA HONDA MINE DISCHARGE PERMIT APPLICATION (DP-1717)**

SEPTEMBER 2015

Submitted To:

New Mexico Environment Department  
Ground Water Quality Bureau  
&  
New Mexico Mining and Minerals Division  
Energy, Minerals and Natural Resources Department  
&  
U.S. Forest Service (Cibola National Forest)

Prepared by:

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## **1.0 Introduction**

Roca Honda Resources, LLC (RHR) conducted sampling in the Rio San Jose (RSJ) channel in May and September of this year as described in the Work Plan submitted to the New Mexico Environment Department (NMED). Results from the May sampling have been received from the lab and this report presents those results (September sampling results are expected in early December and will be included in the final report). Some of the sampling procedures, primarily the installation of well points, were not successful and this interim report recommends changes to the sampling procedure in order to obtain the necessary data to better characterize the current baseline conditions in the RSJ.

### **1.1 Background**

RHR has proposed discharging treated water from a proposed uranium mine into the RSJ near the Village of Milan, NM as an alternative (Alternative 4) in the Environmental Impact Statement currently being prepared by the Cibola National Forest. In response to that proposal, NMED requested that a work plan be prepared and submitted to characterize the current baseline conditions in the RSJ channel through the Village of Milan and the City of Grants. The work plan developed by RHR contains a series of sampling locations for both water and sediment and provides details on how those samples will be collected. The work plan was initially submitted to NMED in August 2014, and revised and resubmitted in April 2015. In the time between the first submittal and the April 2015 submittal, RHR conducted a seismic survey in the RSJ channel to better define the alluvium/bedrock contact so that sample locations and depths could be selected. After responding to comments from NMED on the April 2015 work plan, RHR initiated field work in May 2015 to collect the samples laid out in the work plan.

## **2.0 Sampling**

Sampling was conducted over three days in May 2015 and a day in September by Dan Kapostasy, with RHR, and Kelly Peil, a local consultant. Both Mr. Kapostasy and Mr. Peil have extensive environmental sampling experience using NMED approved protocols. Sediment samples were collected by Mr. Kapostasy on 5/19/2015 from two locations. Sediment samples were collected by Mr. Kapostasy and Mr. Peil on 5/21/2015 from two sites. Sediment samples were collected by Mr. Kapostasy and Mr. Peil on 5/27/2015 from two different sites, and surface water samples from two sites. Two sediment samples and a single water sample were collected by Mr. Kapostasy on 9/1/2015. Sampling sheets for all of the sampling locations can be found in Appendix A

### **2.1 Sampling Issues**

The April 2015 work plan recommended using well points to collect groundwater from the RSJ channel. On 5/21/2015, a well point was driven into the RSJ channel at the discharge point. To install the well point, a 2-3 ft. hole was dug, the well point was placed in the hole and was attempted to be driven to depth with a sledge hammer. The full length of the well point was in the ground and a joint of pipe was added (Figure 2-1). Continual pounding on the well point did little to drive the point deeper, damaged the cap used to protect the threads, and damaged the threads so that another joint of pipe could not be added. It was determined that in the areas of the RSJ that are ephemeral, there is too much clay and too little water to utilize well points.



*Figure 2-1. Attempt at Well Point Installation - Proposed Discharge Point*

Another issue is that water flows from a feature just upstream of Riverwalk park in Grants, which appears to provide steady or at least frequent flow in the RSJ from that point to at least the eastern edge of town. This flow, along with steady spring and summer rains prohibited sediment sampling at some of the downstream locations until late summer.

## **2.2 Sampling Locations**

Nine sampling locations were proposed and accepted by NMED in the April 2015 work plan. Each subsection below describes in detail the channel morphology at each location, as well as the work that was conducted during the sampling program. Table 2-1 gives the information associated with each sampling location; Table 2-2 indicates what was completed at each location. Deviations from what was proposed will be described in the following subsections. Section 4 of this report recommends changes to the sampling described in the work plan as dictated by conditions encountered to date.

Table 2-1. Sample Identification and Locations

Location	Description	State Plane NAD 83 Coordinates, NM Western Zone (US Foot)		
		X	Y	Z
RSJ #1	Upstream of Discharge	2704071.474	1525994.638	6526.274
RSJ #2	Discharge Point	2703789.289	1525095.352	
RSJ #3	Cedar Rd. – Milan	2703832.040	1518004.000	
RSJ #4	El Morro Rd	2711796.186	1511769.314	
RSJ #5	San Jose Park	2715967.689	1510583.591	
RSJ #6	Dixie St.	2719411.599	1510817.826	6426.599
RSJ #7	Nimitz Rd. Bridge	2722295.276	1508936.121	6403.079
RSJ #8	Old Wastewater Discharge	2726106.831	1504362.936	6409.816
RSJ #9	Lobo Canyon	2722185.392	1509992.114	

Table 2-2. Samples Collected at Each Location

Location	Water Sample - Proposed	Water Sample - Collected	Sed. Sample - Proposed	Sed. Sample – Collected
RSJ #1	Well Point	None	0.5' & 1.5'	0.5' & 1.5'
RSJ #2	Well Point	None	0.5' & 1.5'	0.5' & 1.5'
RSJ #3	None	None	0.5' & 1.5'	0.5' & 1.5'
RSJ #4	None	None	0.5' & 1.5'	0.5'
RSJ #5	Well Point	None	0.5', 1.5' & deep	0.5' & 1.5'
RSJ #6	Well Point	Surface Water	0.5' & 1.5'	None – Flowing
RSJ #7	Well Point	0.8' Hole	0.5' & 1.5'	0.5' & 1.5'
RSJ #8	Well Point	Surface Water	0.5' & 1.5'	None - Flowing
RSJ #9	None	None	0.5' & 1.5'	0.5' & 1.5'

### 2.2.1 RSJ #1 – Upstream of Discharge Point

Sampling Location RSJ #1 is the furthest sampling location upstream in the RSJ channel and is approximately 1,000 ft upstream of the proposed discharge point. The site was visited and sampled on 5/27/2015. Figure 2-2 shows an upstream view, Figure 2-3 is looking downstream. The RSJ channel at this location was approximately 12 feet across with a sandy partially vegetated bottom. The channel has been engineered in this area and the levees have been built up for flood control. Digging into the channel revealed more clay material and consolidated sediment. There was no water present in the channel at or around the sample location

Water samples were not collected at this location due to no surface flow and the inability to drive a well point at this location. Sediment samples were collected from the left bank, right bank, and center of the channel at this location and composited. A composite at 0.5 and 1.5 feet were collected in separate containers. For each sample a one gallon zip-lok bag and two 8 oz glass jars were filled.



*Figure 2-2. Location RSJ #1 Facing Downstream (South)*



*Figure 2-3. Location RSJ #1 Facing Upstream (North)*

### 2.2.2 RSJ #2 – Proposed Discharge Location

Sample location RSJ #2 is located at the proposed discharge location in the Village of Milan near Sky Top Community Park. The site was visited and sampled on 5/19/2015 and installation of a



well point was attempted on 5/21/15. The channel at this location is very similar to RSJ #1 with a flat, sandy, partially vegetated bottom, and engineered for flood control. This site is just downstream of a bridge on Stanley Road. The channel width at this location is approximately 10 ft across. There was no water present in the channel at or around the sample locations.

Water samples were not collected at this location due to no surface flow and the inability to drive a well point, again due to impenetrable alluvium. Sediment samples were collected from the left bank, right bank, and center of the channel at this location and composited. A composite at 0.5 and 1.5 feet were collected in separate one gallon zip-loc bags and one 8 oz glass jar.

### 2.2.3 RSJ #3 – Cedar Rd. Village of Milan

Sample location RSJ #3 is in a residential area in the Village of Milan where Cedar Rd. dead ends at the channel. This site was visited and sampled on 5/21/2015. Figure 2-4 shows the channel at location RSJ #3. The channel bottom at this location was harder, less sandy and slightly more vegetated than at the locations located further upstream. The channel was also slightly narrower at approximately 7 ft. across. There was no water present in the channel at or around the sample locations.



*Figure 2-4. Location RSJ #3 Facing Downstream*

Sediment samples were collected from the left bank, right bank, and center of the channel at this location and composited. A composite at 0.5 and 1.5 feet were collected in separate one gallon zip-loc bags and one 8 oz glass jar.

#### 2.2.4 RSJ #4 – El Morro Rd at the old USGS Gaging Station

Sample location RSJ #4 is located on El Morro Rd behind the Diamond G hardware store. This location is also the same as an old USGS gaging station (08343000). This site was visited and sampled on 5/19/15. The channel at this location is very different from other locations, Figure 2-5 shows basalt outcropping in the channel with sand pack around the rocks. There is very little sediment overlying the bedrock, which is basalt. Where there is sand it appears windblown or is packed into cracks and voids in the basalt. The channel is steep sided and well incised. There was no water present in the channel at or around the sample locations.

Due to the lack of alluvium/sediment at this location only a single “grab” sample was collected from a depth of 0.5 ft. The basalt present at or very close to ground surface over much of the sampling location prohibited collection of a composite sample as well as a deeper 1.5 ft. sample.



*Figure 2-5. Rock Outcrop in Channel at RSJ#4*

#### 2.2.5 RSJ #5 – San Jose Park

Sample location RSJ #5 is located in the RSJ channel behind San Jose Park in Grants. This location is more similar to RSJ #1-3 in that it has a sandy vegetated bottom. However the channel through this area is engineered to some degree, but does not have the heightened levees of other locations. The overall channel bottom is quite wide at this location (about 70 ft), but the

main channel is only approximately 8 ft. wide. There was no water present in the channel at or around the sample locations.



*Figure 2-6. Location RSJ #5 Facing Downstream*



*Figure 2-7. Location RSJ #5 Facing Upstream*

Water samples were not collected at this location due to no surface flow and the inability to drive a well point at this location. Sediment samples were collected from the left bank, right bank, and

center of the channel at this location and composited. A composite at 0.5 and 1.5 feet were collected in separate containers. For each sample a one gallon zip-lok bag and one 8 oz glass jar was filled.

#### 2.2.6 RSJ #6 – Dixie St. City of Grants

Sample location RSJ #6 is located near downtown Grants in a residential neighborhood at the end of Dixie St. This site was visited and sampled on 5/27/15. During this visit the site contained standing to slightly flowing water and was heavily vegetated with cattails (Figure 2-8). A walk up and down the channel from RSJ #6 revealed additional vegetation as well as frogs and fish (species undetermined) in the water. A previous visit to the site in December for seismic evaluation indicates that the channel is intermittent in the location as the channel was dry at that time. A second visit to the site in September revealed that the site holds water much of the year.



*Figure 2-8. Cattails at RSJ #6*

Due to the presence of water no sediment sample was collected on the 5/27/2015 date; however, a surface water sample was collected.

## 2.2.7 RSJ #7 – Nimitz Rd. Bridge

Sample location RSJ #7 is located just upstream of the Nimitz Rd. Bridge in Grants. This site was briefly visited on 5/27/2015, but due to the presence of flowing water was not sampled at that time. This site was revisited on 9/1/2015 when a sediment and water sample were collected.

The channel at this location is highly engineered, and is often dredged/cleaned by the city using a backhoe. The channel bottom is approximately 21 ft wide at this location and is a sandy bottom with almost no vegetation in the channel. The sample site is about 50 ft upstream of the bridge on Nimitz Rd (Figure 2-9) and 200 ft downstream of the confluence with the drainage coming out of Lobo Canyon (Figure 2-10). There was flowing water occupying 6 ft of the channel on the day the samples were collected.



*Figure 2-9. Location RSJ #7 Looking Downstream towards Nimitz Rd. Bridge*



*Figure 2-10. Location RSJ #7 Looking Upstream towards the Confluence with Lobo Canyon Drainage*

Sediment samples for the 0.5 ft sample were collected from the right bank and at 6 ft and 12 ft to the left of the first sample and composited. A sample from the left bank could not be collected because of the presence of flowing water. The two sample locations closest to the water slowly filled with water during sampling. The 1.5 ft sample was only collected from the right bank hole due to the inflow of water in the other two. The 1.5 ft sample represents a single grab sample as opposed to a composite.

A “groundwater” sample was also collected from this site. The middle hole used for the sediment sample was deepened and widened to allow an adequate amount of water to seep in to gather a sample (Figure 2-11).



*Figure 2-11. Hole used at RSJ #7 to Collect Water Sample*

#### 2.2.8 RSJ #8 – Old Wastewater Treatment Plant Discharge Point

Sample location RSJ #8 is located near the former discharge point of the dismantled Grants Wastewater Treatment Plan. As with sample locations RSJ #6 & 7, this location also contained flowing water. The area was also highly vegetated with reeds and grasses. No aquatic life was observed at this location.

A surface water sample was collected on 5/27/2015, but as with location RSJ #6 no sediment sample was collected on 5/27/2015 because of the flowing water, but a surface water sample was collected. The site was revisited on 9/1/2015, but was still contained flowing water from bank to bank.



*Figure 2-12. Location RSJ #8 Facing Downstream*



*Figure 2-13. Location RSJ #8 Facing Upstream*

### 2.2.9 RSJ #9 – Lobo Canyon Drainage

Sample location RSJ #9 is in Lobo Canyon drainage approximately 900 ft. north of the confluence with the Rio San Jose. This location was visited and sampled on 5/27/2015. The Lobo Canyon drainage has a very different morphology than the RSJ in that there is virtually no



vegetation in the channel and the channel itself has a much sandier bottom than the RSJ. The channel has been engineered at the sample location for flood control. The channel bottom is approximately 50 ft across with the main channel occupying approximately half that width. There was no water at the sample site, but there was ponded water just upstream of the sample location.



*Figure 2-14. Location RSJ #9 Facing Downstream (South)*



*Figure 2-15. Location RSJ #9 Facing Upstream (North)*

### **2.3 Water Sampling**

Due to the issues described in Section 2.1, no well points were driven and therefore, no water was collected from well points. Water was flowing in the channel from a well the City of Grants pumps into the RSJ from Riverwalk Park downstream. Two surface water samples were collected; one from the Dixie St. location and the other from just downstream of the old Grants wastewater treatment plant on the east end of town. A single “groundwater” sample was collected from a hole dug at the Nimitz Rd. location. Surface water samples were not proposed in the RSJ work plan, but since water was flowing, it was decided that surface water samples could provide potentially useful data. Results for this sampling are given in Section 3.1.

Surface water samples were collected by using a clean plastic half gallon jug to collect water out of the channel and then distribute the water to the various sample containers. Field parameters including pH, TDS, conductivity, etc. were measured at the sampling site using a multiparameter meter and turbidity was measured using a field turbidity meter. The same sampling method was used for the Nimitz Rd. location.

### **2.4 Sediment Sampling**

Sediment samples were collected for sediment chemistry and for use in the Synthetic Precipitation Leaching Procedure (SPLP) everywhere upstream of Riverwalk Park where the channel was not currently flowing (RSJ #1-5). A single sample downstream of Riverwalk Park was collected at the Nimitz Rd. Location (RSJ #7). An additional sediment sample was collected near the confluence of the Lobo Canyon Drainage and the RSJ in the Lobo Canyon Channel. Sites RSJ #6 and RSJ #8 will be revisited in the fall or winter to attempt to collect samples when water is not flowing

Samples were collected at 0.5 and 1.5 ft depths at all locations except the El Morro Road location where the depth to bedrock (basalt) prohibited collection of a 1.5 ft sample. Sample depth was reached using a spade or post hole digger at 3 locations across the channel bottom (a right bank, left bank and center channel location). The sample was collected from each of the three locations and combined into a stainless steel bowl using a trowel. Sampling equipment was thoroughly cleaned between sample locations as well as between collecting the 0.5 and 1.5 ft samples at a single site. The combined sample was mixed and put into a labeled one gallon bag and one 8 oz glass jar for shipping. This sample volume was adequate for both sediment chemistry and SPLP analysis. In the locations where samples for volatile organic compounds analysis were collected, and additional 8 oz. glass jar of material was collected.

The surface of each sample location as well as the 0.5 and 1.5 ft depths were scanned with a hand held scintillometer for dose readings. Those readings were recorded on the field sheets in  $\mu\text{R/hr}$ .

### 3.0 Results

All samples were sent to Inter-Mountain Labs (IML) in Sheridan, WY for analysis. Summary tables of all the lab results can be found in Appendices B-D. Details can be found in the sections below.

#### 3.1 Water Quality

As mentioned above, no well points were installed during the first sampling period, and the two water samples reported here are from surface water in the RSJ channel. The results from the water sample collected at Nimitz Rd will be included in the final report. The chemistry of the water should reflect groundwater quality in the formation the City of Grants pumps the water from, precipitation/runoff, and the materials dissolved or mobilized as the water flows downstream. Table 3-1 below shows key indicator parameters while full analytical results are given in Appendix B.

Table 3-1. Rio San Jose Water Quality

Parameter	RSJ #6	RSJ #8	Unit	Reporting Limit
pH	8.3	8.4	s.u.	0.1
Color	58	31	C.U.	1
Odor	23	28	TON	1
Electrical Conductivity	2190	2900	$\mu\text{mhos/cm}$	5
Total Dissolved Solids (@ 180° C)	1490	2280	mg/L	10
Total Dissolved Solids (Calc)	1380	2040	mg/L	10
Total Suspended Solids	546	22	mg/L	5
Floatable Particles	ND	ND	mg/L	10
Oil & Grease	ND	ND	mg/L	3.11

There are very low levels of radionuclides in the surface water collected at these two sites. It would be very difficult to distinguish whether these low levels are due to contamination or natural conditions. The water from both of these locations were analyzed for pesticides and SVOCs. The sample collected from RSJ #8 contained detectable amounts of 'bis(2-chloroethyl)ether and phenol. 'bis(2-chloroethyl)ether is reported by the EPA to have been used

as a solvent, a constituent of paints and varnishes, as a textile cleaning fluid, and in the purification of oils and gasoline. Phenols are most commonly used in the medical, construction, automotive and appliance industries. It is not clear what the source of those contaminants are.

### **3.2 Sediment Chemistry**

Sediments were collected from six different locations along the RSJ channel and from a single location in the Lobo Canyon drainage (Note the results from the Nimitz Rd. site are not included here, but will be included in the final report). The Lobo Canyon sample differs from the RSJ samples in that it was much sandier than the other samples with a lower aluminum component and a higher sodium component than those samples from the RSJ. This reflects two different sediment sources as the RSJ primarily drains sedimentary rocks (sandstones, siltstones, and shales) and the Lobo Canyon drainage is sourced from the volcanic rocks from Mt. Taylor.

There were pesticides above the detection limit found at location RSJ #1, which is located upstream of the discharge point. That area was used for agriculture in the past, which may have introduced those contaminants to the system.

### **3.3 SPLP Quality**

SPLP is a procedure by which sediments are exposed to synthetic precipitation with known water chemistry. The water that passes through the sediment is collected and analyzed to determine what constituents the water has leached out of the sediment.

Various metals including arsenic, cadmium, selenium and uranium were leached from the sediments, but were at very low levels. Other constituents were also leached out of the sediments, but again, nothing of significance was found.

## **4.0 Future Sampling Recommendations**

After spending time in the field collecting samples it was determined other sampling techniques, different from outside of those described in the April 2015 work plan, would need to be used to gather the necessary data to more accurately describe baseline water and sediment chemistry in the Rio San Jose. Options for possible additional sampling are described below and will be implemented following approval by NMED.

### **4.1 Water Sampling**

Since installing well points by hand was determined to be impractical for this study, RHR is proposing to install three alluvial wells along the Rio San Jose to collect baseline water quality data as well as to use as future monitor wells. The three locations are shown on Figure 4-1, and correspond to three of the sites in the original work plan; the discharge location, Rio San Jose Park, and the East Grants location. Alluvial monitor wells would allow sampling to take place on an as needed basis, if water was present in the wells, and would provide sampling locations that could be monitored prior to, during, and after mining operations. RHR proposes installing these wells at least a year prior to the anticipated first discharge into the RSJ from the Roca Honda Mine. Construction of the pipeline to deliver the water will take a minimum of a year and wells would be installed when pipeline construction began. The wells would be permitted through the New Mexico Office of the State Engineer as monitor wells and would be constructed to meet their regulations.

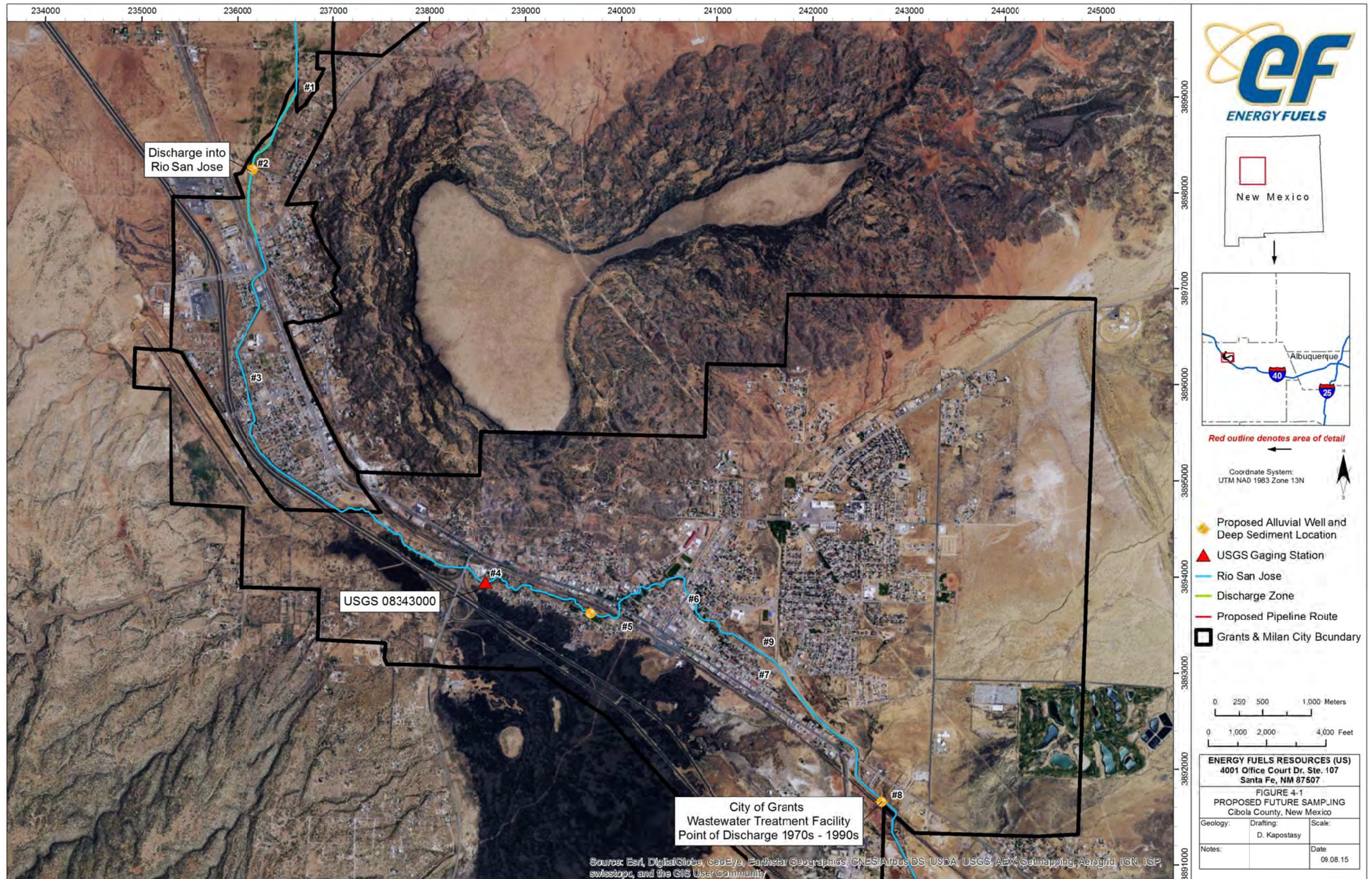


Figure 4-1. Proposed Future Sampling Locations

After conducting work in the channel, it appears that the alluvium drains very quickly and might only be saturated during and right after flow events. This makes collecting samples quite difficult even if well points were installed. Monitor wells set just outside the channel would allow for sampling during flow events, which is not possible with well points installed in the channel.

## **4.2 Sediment Sampling**

RHR had proposed to collect sediment at the alluvium/bedrock contact at the San Jose Park site (RSJ #5). Due to the nature of the sediment being very difficult to dig through, hand auguring to depth has been ruled out as a collection method. RHR now proposes collecting sediment samples from the base of the alluvial wells proposed in Section 4.1. This method would allow for the collection of three samples as opposed to the single sample proposed in the work plan. Again these samples would be collected at least a year prior to first discharge, which would allow enough time for analysis and establish baseline conditions before discharge begins. Samples would be analyzed for the same constituents described in the work plan and SPLP leaching would also be done.

**Appendix A**  
Field Data Sheets

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH R53 Sampling		Date: 5/27/15
Site #/Transect #: 1		Start Time: 10:53
Sampler(s): D Kapostany + Kelly Peil		Finish Time: 11:28
		Weather: 70° Partly Sunny
Sample Location (NM State Plane Western Zone NAD 83) 6526.274		
Easting (X): <del>27</del> 2704071.474		Northing (Y): 1525994.635
<b>Sample Information</b>		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger Spade Other -		
Sampling Method (circle one): Grab <u>Composite (n=3)</u>		
Sub-sample Locations (Distances from left endpoint): 0, 6, +12		
Lab: IML		Ship Date:
Sample ID: RH-SES-R532-008	Sample Depth (ft): 0.5'	Sample Container: Bag + 2 Jars
	Sample Texture: Sand + Clay	Sample Size: 1 Gal bag + 2 8 oz Jars
	Sample Color: 7.5YR 5/3	Organic Content: low some roots
	Rad. Scan (surface): 260R/hr	Rad. Scan (sample depth): 480R/hr
<b>Description of Sampling Location and Other Notes</b>		
Dry Sandy Ground Took upstream + downstream photos		
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>		
<p>The site map is a hand-drawn sketch of a river or stream. The river flows from left to right. On the right bank, there is a vertical line representing a bridge, labeled 'Stanley Rd Bridge'. An arrow points from the bridge towards the right, labeled 'To Milan'. On the left bank, there are three small 'X' marks indicating the locations of the sub-samples, with arrows pointing to them from the left.</p>		



**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RSS Sampling		Date: 5/27/15	
Site #/Transect #: 1		Start Time: 11:28	
Sampler(s): D Kapestasiy + K Reil		Finish Time: 11:45	
Weather: 70° Partly Sunny			
Sample Location (NM State Plane Western Zone NAD 83)			
Easting (X): 2704071.474		Northing (Y): 1525994.638	
<b>Sample Information</b>			
Sampling Device (circle one): <u>Scoop</u> Sampling Auger    Spade    Other -			
Sampling Method (circle one):    Grab <u>Composite (n=3)</u>			
Sub-sample Locations (Distances from left endpoint): 0, 6, 12			
Lab: IML		Ship Date:	
Sample ID:  RH-SED-RSS2-009	Sample Depth (ft): 1.5'	Sample Container: 1 bag + 2 Jars	
	Sample Texture: clay / sand	Sample Size: 1 Gal bag + 2 8 oz Jars	
	Sample Color: 7.5 YR 3/4	Organic Content: low	
	Rad. Scan (surface): 26 uR/hr	Rad. Scan (sample depth): 67 uR/hr	
<b>Description of Sampling Location and Other Notes</b>			
See 0.5' Sample for Notes			
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>			
See 0.5' Sample for Map			

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RSJ Sampling		Date: 5/9/13
Site #/Transect #: RSJ #2		Start Time: 12:30
Sampler(s): D. Kapastasy		Finish Time: 13:30
		Weather: 64°F Sunny
Center Channel Sample Location (NM State Plane Western Zone NAD 83)		
Easting (X): 2703789.289		Northing (Y): 1525095.362
<b>Sample Information</b>		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger Spade Other -		
Sampling Method (circle one): Grab <u>Composite (n=3)</u>		
Sub-sample Locations (Distances from left endpoint): 0', 5', 10'		
Lab: IML		Ship Date:
Sample ID: RH-SEO-RSJ2-001	Sample Depth (ft): 0.5'	Sample Container: Bag + Jar
	Sample Texture: Clay + Sand	Sample Size: 1 gal bag + 18 oz Jar
	Sample Color: 5YR 5/3	Organic Content: Low (Roots)
	Rad. Scan (surface): 20 uR/hr	Rad. Scan (sample depth): 35 uR/hr
<b>Description of Sampling Location and Other Notes</b>		
Enough Sample for Both Sed + Leach Analysis		
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>		
<p>The site map shows a horizontal channel or road. On the left, a vertical line is labeled 'Stanley Road'. Above the channel, the word 'Park' is written. Two vertical lines with downward arrows are labeled 'Bridge'. On the right side of the channel, three 'X' marks are placed vertically, with a bracket below them labeled 'approx 15''. At the bottom of the map, there is a horizontal line with vertical tick marks, possibly representing a scale or another boundary.</p>		

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RST sampling		Date: 5/19/15
Site #/Transect #: RST # 2		Start Time: 13:33
Sampler(s): D. Kapostasy		Finish Time: 14:04
		Weather: 64°F Sunny
<b>Sample Location (NM State Plane Western Zone NAD 83)</b>		
Easting (X): 2703789.289		Northing (Y): 1525095.352
<b>Sample Information</b>		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger    Spade    Other -		
Sampling Method (circle one):    Grab <u>Composite (n=2)</u>		
Sub-sample Locations (Distances from left endpoint): 0', 5', & 10'		
Lab: IML		Ship Date:
Sample ID:  RH-SED-RSJ2-002	Sample Depth (ft): 1.5'	Sample Container: Bag + Jar
	Sample Texture: Clay/Sand	Sample Size: 1 gal bag & 18 oz Jar
	Sample Color: SYR G/3	Organic Content: Low (Roots)
	Rad. Scan (surface): 28 uR/hr	Rad. Scan (sample depth): 18 uR/hr
<b>Description of Sampling Location and Other Notes</b>		
Collected at same location as RH-SED-RSJ2-001 but at 1.5' depth		
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>		
See Sample RH-SED-RSJ2-001		

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RST Sampling		Date: 5/21/15
Site #/Transect #: 3		Start Time: 11:23
Sampler(s): D Kapostasy Kelly Peil		Finish Time: 11:55
Weather: 60° Overcast		
Sample Location (NM State Plane Western Zone NAD 83)		
Easting (X): 2703832.040		Northing (Y): 1518004.000
Sample Information		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger Spade Other -		
Sampling Method (circle one): Grab <u>Composite (n=3)</u>		
Sub-sample Locations (Distances from left endpoint): 0, 4, 7'		
Lab: IML		Ship Date:
Sample ID: RH-SED-RS3-004	Sample Depth (ft): 0.5	Sample Container: 1 gal bag + Jar
	Sample Texture: clay	Sample Size: 1 gal + 8 oz Jar
	Sample Color: 7.5YR 4/3	Organic Content: low
	Rad. Scan (surface): 33 uR/hr	Rad. Scan (sample depth): 42 uR/hr
Description of Sampling Location and Other Notes		
<p>Cedar Road Milan                  Marked locations will return to GPS                  Took 2 down stream facing pics</p>		
Site Map (Indicate Sample/Sub-sample Locations with an X)		

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RST Sampling		Date: 5/21/16
Site #/Transect #: 3		Start Time: 11:55
Sampler(s): D Kaportasy & Kelly Pei		Finish Time: 12:22
		Weather: 60° Overcast
Sample Location (NM State Plane Western Zone NAD 83)		
Easting (X): 2703832.040		Northing (Y): 1518004.000
Sample Information		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger Spade Other -		
Sampling Method (circle one): Grab <u>Composite (n=3)</u>		
Sub-sample Locations (Distances from left endpoint): 0', 4', 7'		
Lab: IML		Ship Date:
Sample ID:  RH-SED-RST3-003	Sample Depth (ft): 1.5'	Sample Container: Gal Bag & Jar
	Sample Texture: sand/clay	Sample Size: 1 Gal bag & 1 8 oz Jar
	Sample Color: 5YR 4/	Organic Content: Low
	Rad. Scan (surface): 33 uR/hr	Rad. Scan (sample depth): 34 uR/hr
Description of Sampling Location and Other Notes		
<p>Cedar Rd Milan</p> <p>See sample RH-SED-RST3-<del>003</del><sup>004</sup> for additional notes.</p> <p>Sampled in same holes as 0.5' samples</p>		
Site Map (Indicate Sample/Sub-sample Locations with an X)		
<p>see sample RH-SED-RST3-004 for map</p>		

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: <i>RH R53 Sampling</i>		Date: <i>5/19/15</i>	
Site #/Transect #: <i>4</i>		Start Time: <i>14:35</i>	
Sampler(s): <i>Dan Kepartasy</i>		Finish Time: <i>15:28</i>	
Weather: <i>70° Sunny</i>			
Sample Location (NM State Plane Western Zone NAD 83)			
Easting (X): <i>2711796.186</i>		Northing (Y): <i>1511769.314</i>	
Sample Information			
Sampling Device (circle one): <u>Scoop</u> Sampling Auger    Spade    Other -			
Sampling Method (circle one): <u>Grab</u> Composite (n= )			
Sub-sample Locations (Distances from left endpoint): <i>10'</i>			
Lab: <i>IML</i>		Ship Date:	
Sample ID:  <i>RH-SED-R5J4-003</i>	Sample Depth (ft): <i>0.5'</i>	Sample Container: <i>Bag + Jar</i>	
	Sample Texture: <i>Clay/Sand</i>	Sample Size: <i>1 Gal + 1 8 oz Jar</i>	
	Sample Color: <i>5YR 5/3</i>	Organic Content: <i>Low (Roots)</i>	
	Rad. Scan (surface): <i>24 uR/hr</i>	Rad. Scan (sample depth): <i>27 uR/hr</i>	
Description of Sampling Location and Other Notes			
<i>GPS Not working need to return &amp; resurvey</i>			
Site Map (Indicate Sample/Sub-sample Locations with an X)			

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RST Sampling		Date: 5/21/2015
Site #/Transect #: 5		Start Time: 13:03
Sampler(s): D Kapostasy K Peil		Finish Time: 13:37
		Weather: 70° Overcast
Sample Location (NM State Plane Western Zone NAD 83)		
Easting (X): 2711796.186 <sup>00</sup> 2715967.689		Northing (Y): 1511769.314 <sup>00</sup> 1510583.591
Sample Information		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger    Spade    Other -		
Sampling Method (circle one):    Grab <u>Composite (n=3)</u>		
Sub-sample Locations (Distances from left endpoint): 0', 5', 8'		
Lab: IML		Ship Date:
Sample ID:  RH-SEO-RSJS-006	Sample Depth (ft): 0.5	Sample Container: Bag + Jar
	Sample Texture: Clay	Sample Size: 1gal bag & 18 oz Jar
	Sample Color: 7.5YR 3/3	Organic Content: Low
	Rad. Scan (surface): 25 uR/hr	Rad. Scan (sample depth): 28 uR/hr
Description of Sampling Location and Other Notes		
<p>By RST Park                  Started drizzling @ 13:20                  Need to return to GPS                  Took Upstream &amp; Downstream P.c.s</p>		
Site Map (Indicate Sample/Sub-sample Locations with an X)		
<p>The site map shows a river labeled 'R.R.' at the top. Below it is a 'Parking Lot' containing 'Trees'. A 'fence' is drawn between the parking lot and the river. A horizontal line represents the riverbank, with three 'X' marks indicating sample locations at 0', 5', and 8' from the left end of a 136' segment. A north arrow is located near the sample locations. At the bottom of the map is 'San Jose Rd'.</p>		

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RSTJ Sampling		Date: 5/21/15
Site #/Transect #: 5		Start Time: 13:37
Sampler(s): D Kapsstad + K Peil		Finish Time: 13:50
Weather: 70° Light Rain		
Sample Location (NM State Plane Western Zone NAD 83)		
Easting (X): 2715967.689		Northing (Y): 1510583.591
<b>Sample Information</b>		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger Spade Other -		
Sampling Method (circle one): Grab <u>Composite (n=3)</u>		
Sub-sample Locations (Distances from left endpoint): 0', 5', 8'		
Lab: IML		Ship Date:
Sample ID:  RH-SED-RSJS-007	Sample Depth (ft): 1.5	Sample Container: Bag + Jar
	Sample Texture: Clay	Sample Size: 1 Gal Bag + 8 oz Jar
	Sample Color: 5YR 2.5/3	Organic Content: Low
	Rad. Scan (surface): 25 uR/hr	Rad. Scan (sample depth): 28 uR/hr
<b>Description of Sampling Location and Other Notes</b>		
<p>Stopped Raining during sampling</p> <p>See RH-SED-RSJS-006 for Notes</p>		
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>		
<p>See Sample RH-SED-RSJS-006</p>		



**WATER SAMPLING FIELD DATA SHEET**

Project Name: <i>RH R5J Sampling</i>		Date: <i>5/11 5/27/13</i>	
Well ID/Site #: <i>G</i>		Start Time: <i>13:30</i>	
Sampler(s): <i>D Kapostasy &amp; K Peil</i>		Finish Time: <i>14:18</i>	
		Weather: <i>75° Overcast</i>	
Sample Location (NM State Plane Western Zone NAD 83) <i>6426.699</i>			
Easting (X): <i>2719411.599</i>		Northing (Y): <i>1510817.826</i>	
<b>Sample Information</b>			
Sampling Type (circle one): Well <u>Surface Water</u> Well Point Other -			
Sampling Method (circle one): Pump Bailer <u>Grab</u> Other -			
Purge Volume (if applicable): -			
Lab: <i>DML</i>		Ship Date:	
Sample ID:  <i>RH-SW-R5JG-001</i>	Probe: <i>Hanna Multimeter</i>		
	Water Level (ft): <i>-</i>	Temperature (°F): <i>70.27</i>	
	pH: <i>8.60</i>	ORP: <i>53.7</i>	
	DO (% sat.): <i>NO reading</i>	DO (mg/l): <i>NO reading</i>	
	Conductivity: <i>14.04</i>	Resistivity: <i>0.7</i>	
	TDS: <i>703 mg/L</i>	Salinity: <i>0.71</i>	
Atm. Pressure: <i>802.2 mb</i>	Turbidity: <i>6.74</i>		
<b>Description of Sampling Location and Other Notes</b>			
<i>Upstream of Davis &amp; R5J. Amongst cattle's</i>			
<b>Purge Volume Calculation</b>			
Water Level (ft):		Well TD (ft):	
Water Column (ft):			
Casing #1:	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
Casing #2:	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
Casing #3:	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
<b>TOTAL =</b>			<b>PV (gal)</b>
<b>Total Volume Purged (gal):</b>			
<b>Location of Purge Water:</b>			
Casing Capacities (Roca Honda Wells):			
<i>4" = 0.65 gal/linear ft.</i>		<i>6 5/8" = 1.80 gal/linear ft.</i>	
		<i>8" = 2.60 gal/linear ft.</i>	

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RST Characterization		Date: 8/ 9/1/2015
Site #/Transect #: RST #7 (Nimitz)		Start Time: 11:54
Sampler(s): D Kapostasy		Finish Time: 12:15
Weather: 74° Sunny		
<b>Sample Location (NM State Plane Western Zone NAD 83)</b>		
Easting (X): 2722295.270		Northing (Y): 1508936.121      0403.071
<b>Sample Information</b>		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger    Spade    Other -		
Sampling Method (circle one):    Grab <u>Composite (n=3)</u>		
Sub-sample Locations (Distances from left endpoint): from Right bank facing DS    3, 9, 15		
Lab: IML		Ship Date:
Sample ID:  RH-SEO-RST7-012	Sample Depth (ft): 0.5	Sample Container: 1 gal bag + 10 oz Jar
	Sample Texture: Sandy	Sample Size: see Above
	Sample Color: 7.5 Y/R 8/4	Organic Content: Low
	Rad. Scan (surface): 15 uR/hr	Rad. Scan (sample depth): 15 uR/hr
<b>Description of Sampling Location and Other Notes</b>		
<p>Holes filled up w/ water during sampling</p> <p>2 pics one downstream, one upstream</p>		
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>		

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH R55		Date: 9/1/15	
Site #/Transect #: R55#7		Start Time: 12:15	
Sampler(s): D Kapostasy		Finish Time: 12:37	
Weather: 74° Sunny			
<b>Sample Location (NM State Plane Western Zone NAD 83)</b>			
Easting (X): 2722295.270		Northing (Y): 1508936.121 C403.079	
<b>Sample Information</b>			
Sampling Device (circle one): <u>Scoop</u> Sampling Auger Spade Other -			
Sampling Method (circle one): <u>Grab</u> Composite (n= ) Other Holes flooded			
Sub-sample Locations (Distances from left endpoint): from RB facing DS 3'			
Lab: IML		Ship Date:	
Sample ID: RH-SED-R557-012	Sample Depth (ft): 1.5	Sample Container: 1 gal bag + 18 oz jar	
	Sample Texture: Sandy Clay	Sample Size: See above	
	Sample Color: 10 YR 3/2	Organic Content: High	
	Rad. Scan (surface): 15 uR/hr	Rad. Scan (sample depth): 18 uR/hr	
<b>Description of Sampling Location and Other Notes</b>			
Other holes flooded @ 0.5' so only furthest from water used			
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>			
See Sample 012			

**WATER SAMPLING FIELD DATA SHEET**

Project Name: <i>R5J</i>		Date: <i>9/1/15</i>	
Well ID/Site #: <i>R5J# 7</i>		Start Time: <i>12:38</i>	
Sampler(s): <i>0 Kapastasy</i>		Finish Time:	
Weather: <i>75° Partly Cloudy</i>			
<b>Sample Location (NM State Plane Western Zone NAD 83)</b>			
Easting (X): <i>2722295.276</i>		Northing (Y): <i>1508936.121</i> <i>6407.079</i>	
<b>Sample Information</b>			
Sampling Type (circle one): Well    Surface Water    Well Point    Other -			
Sampling Method (circle one): Pump    Bailer <u>Grab</u> Other -			
Purge Volume (if applicable): <i>NA</i>			
Lab: <i>EML</i>		Ship Date: <i>9/1/15</i>	
<i>RH-SW-R5J7-003</i>	Sample ID:		
	Probe: <i>Hana</i>		
	Water Level (ft): <i>0.8'</i>		Temperature (°F): <i>75.83°</i>
	pH: <i>7.61</i>		ORP: <i>-18.4</i>
	DO (% sat.):		DO (mg/l):
	Conductivity: <i>2625</i>		Resistivity: <i>0.4</i>
	TDS: <i>1344</i>		Salinity: <i>1.38</i>
Atm. Pressure: <i>0.7988</i>		Turbidity: <i>&gt; 1000 NTU</i>	
<b>Description of Sampling Location and Other Notes</b>			
<i>Dug a hole &amp; sampled inflow water ~ 10" deep</i>			
<i>Adjacent flowing water</i>			
<i>pH = 8.02</i>		<i>TDS = 1463</i>	
<i>temp = 81.48°</i>		<i>Conduct = 3065</i>	
<i>ORP = 23.1</i>		<i>Sal = 1.51</i>	
		<i>Resis = 0.3</i>	
<b>Purge Volume Calculation</b>			
<b>Water Level (ft):</b>		<b>Well TD (ft):</b>	
<b>Water Column (ft):</b>			
<b>Casing #1:</b>	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
<b>Casing #2:</b>	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
<b>Casing #3:</b>	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
<b>TOTAL =</b>			<b>PV (gal)</b>
<b>Total Volume Purged (gal):</b>			
<b>Location of Purge Water:</b>			
Casing Capacities (Roca Honda Wells):			
<i>4" = 0.65 gal/linear ft.</i>		<i>6 5/8" = 1.80 gal/linear ft.</i>	
		<i>8" = 2.60 gal/linear ft.</i>	

**WATER SAMPLING FIELD DATA SHEET**

Project Name: <i>RH RST Sampling</i>		Date: <i>5/22/15</i>	
Well ID/Site #: <i>8</i>		Start Time: <i>14:59</i>	
Sampler(s): <i>D Kapostasy + K Peil</i>		Finish Time: <i>15:24</i>	
		Weather: <i>75° Overcast</i>	
Sample Location (NM State Plane Western Zone NAD 83) <i>C409.816</i>			
Easting (X): <i>2726106.831</i>		Northing (Y): <i>1504362.936</i>	
<b>Sample Information</b>			
Sampling Type (circle one): Well <u>Surface Water</u> Well Point Other -			
Sampling Method (circle one): Pump Bailer <u>Grab</u> Other -			
Purge Volume (if applicable):			
Lab: <i>ZML</i>		Ship Date:	
Sample ID:  <i>RH-SW-RST8-002</i>	Probe: <i>Hanna Multi Meter</i>		
	Water Level (ft): <i>---</i>	Temperature (°F): <i>75.77</i>	
	pH: <i>8.56</i>	ORP: <i>62.6</i>	
	DO (% sat.): <i>NR</i>	DO (mg/l): <i>NR</i>	
	Conductivity: <i>3082</i>	Resistivity: <i>0.3</i>	
	TDS: <i>1542</i>	Salinity: <i>1.61</i>	
	Atm. Pressure: <i>806.5</i>	Turbidity: <i>191</i>	
<b>Description of Sampling Location and Other Notes</b>			
<i>Upstream + Downstream pics</i>			
<b>Purge Volume Calculation</b>			
<b>Water Level (ft):</b>		<b>Well TD (ft):</b>	
<b>Water Column (ft):</b>			
<b>Casing #1:</b>	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
<b>Casing #2:</b>	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
<b>Casing #3:</b>	gal/linear ft. X	ft. of water X	Casing Volumes = PV (gal)
<b>TOTAL =</b>			<b>PV (gal)</b>
<b>Total Volume Purged (gal):</b>			
<b>Location of Purge Water:</b>			
Casing Capacities (Roca Honda Wells):			
<i>4" = 0.65 gal/linear ft.</i>		<i>6 5/8" = 1.80 gal/linear ft.</i>	
		<i>8" = 2.60 gal/linear ft.</i>	

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH <del>X</del> RSJ Sampling		Date: 5/27/15
Site #/Transect #: 9		Start Time: 12:42
Sampler(s): D Kapostazy K. Peil		Finish Time: 13:02
		Weather: 75° Partly Sunny
Sample Location (NM State Plane Western Zone NAD 83) 6423.036		
Easting (X): 2722185.392		Northing (Y): 1509992.114
<b>Sample Information</b>		
Sampling Device (circle one): <u>Scoop</u> Sampling Auger Spade Other -		
Sampling Method (circle one): Grab <u>Composite (n=3)</u>		
Sub-sample Locations (Distances from left endpoint): 0', 12', 25'		
Lab: IML		Ship Date:
Sample ID:  RH-SED-RSJ9-010	Sample Depth (ft): 0.5	Sample Container: Bag & Jar
	Sample Texture: 7.5YR 4/5g	Sample Size: 1 Gal Bag + 8 oz Jar
	Sample Color: Sandy	Organic Content: Very low
	Rad. Scan (surface): 31 uR/hr	Rad. Scan (sample depth): 45 uR/hr
<b>Description of Sampling Location and Other Notes</b>		
Took down + upstream pics		
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>		
<p style="text-align: center;">Labs x x x      See GPS coordinates for center x</p> <p style="text-align: center;">RSJ</p>		

**SEDIMENT COLLECTION FIELD DATA SHEET**

Project Name: RH RSS Sampling		Date: 5/27/15	
Site #/Transect #: 9		Start Time: 13:02	
Sampler(s): D Kapostasy & K Pei		Finish Time: 13:15	
Weather: 75° Partly Sunny			
Sample Location (NM State Plane Western Zone NAD 83)			
Easting (X): 2722185.392		Northing (Y): 1509992.114	
<b>Sample Information</b>			
Sampling Device (circle one): <u>Scoop</u> Sampling Auger    Spade    Other -			
Sampling Method (circle one):    Grab <u>Composite (n=3)</u>			
Sub-sample Locations (Distances from left endpoint): 0, 12, 25'			
Lab: <u>ITML</u>		Ship Date:	
Sample ID:  RH-SEO-RSS9-011	Sample Depth (ft): 1.5'	Sample Container: Bag + Jar	
	Sample Texture: Sand	Sample Size: 1 Gal Bag + 8 oz Jar	
	Sample Color: 10YR 4/4	Organic Content: Very Low	
	Rad. Scan (surface): 312R/hr	Rad. Scan (sample depth): 342R/hr	
<b>Description of Sampling Location and Other Notes</b>			
Encountered water in downstream right hole other hole bottoms damp			
<b>Site Map (Indicate Sample/Sub-sample Locations with an X)</b>			

**Appendix B**  
Water Quality Data



## Water Sampling Results

Sample ID	RH-SW-RSJ6-001	RH-SW-RSJ8-002	RH-SW-RSJ7-003	Units	Detection Limit	Method
Lab ID	S1505510-001	S1505470-001				
Location	RSJ #6	RSJ #8	RSJ #7			
Type	Water Analysis	Water Analysis	Water Analysis			
Sample Date	5/27/2015	5/27/2015	9/1/2015			
<b>Field Parameters</b>						
Turbidity	6.74	191		NTU		Field Measurement
TDS	703	1542		mg/l		Field Measurement
Temp	70.27	75.77		deg F		Field Measurement
Salinity	0.71	1.61		ppt		Field Measurement
Resistivity	0.7	0.3		Kohm/cm		Field Measurement
pH	8.6	8.56		s.u.		Field Measurement
ORP	53.7	62.6		mV		Field Measurement
Conductivity	1404	3082		µmhos/cm		Field Measurement
Atmospheric Pressure	0.7917	0.796		atm		Field Measurement
<b>General Parameters</b>						
pH	8.3	8.4		s.u.	0.1	SM 4500 H B
Color	58	31		C.U.	1	SM 2120B
Odor	23	28		TON	1	SM 2150B
Electrical Conductivity	2190	2900		µmhos/cm	5	SM 2510B
Total Dissolved Solids (180)	1490	2280		mg/L	10	SM 2540
Total Dissolved Solids (Calc)	1380	2040		mg/L	10	SM 1030E
Total Suspended Solids	546	22		mg/L	5	SM 2540
Floatable Particles	ND	ND		mg/L	10	SM 2530B
Oil & Grease N-Hexane Extractable	ND	ND		mg/L	3.11	EPA 1664A
<b>Microorganisms</b>						
E. coli	15	1410		MPN/100mL	1	SM9223B
<b>Anions/Cations</b>						
Total Alkalinity (as CaCO3)	225	254		mg/L	5	SM 2320B
Hardness (Ca/Mg As CaCO3)	524	732		mg/L	1	SM 2340B
Ammonia Nitrogen (As N)	0.1	0.1		mg/L	0.1	EPA 350.1
Nitrate Nitrogen (as N)	ND	ND		mg/L	0.1	EPA 353.2
Nitrite Nitrogen (as N)	ND	ND		mg/L	0.1	EPA 353.2
Total Nitrogen	1	ND		mg/L	1	Calculation
Total Kjeldahl Nitrogen (TKN)	1	ND		mg/L	1	EPA 351.2
Phosphorus (Orthophosphate as P)	ND	ND		mg/L	0.1	EPA 300.0
Total Cyanide	ND	ND		mg/L	0.005	EPA 335.4
Total Recoverable Phenolics	ND	ND		mg/L	0.05	EPA 420.4
Silica as SiO2	10.1	6.0		mg/L	0.1	EPA 200.7
Total Carbon	47	6		mg/L	1	SM 5310B
Total Organic Carbon	8	3		mg/L	1	SM 5310B
Langelier Value	1.13	1.29			-999	Calculation
Bicarbonate as HCO3	273	295		mg/L	5	SM 2320B
Carbonate as CO3	ND	7		mg/L	5	SM 2320B
Hydroxide as OH	ND	ND		mg/L	5	SM 2320B
Chloride	207	324		mg/L	1	EPA 300.0
Fluoride	0.5	0.6		mg/L	0.1	SM 4500FC
Nitrate-Nitrite Nitrogen (as N)	ND	ND		mg/L	0.1	EPA 353.2
Sulfate	562	845		mg/L	1	EPA 300.0
Calcium	120	134		mg/L	1	EPA 200.7
Magnesium	54	97		mg/L	1	EPA 200.7
Potassium	16	22		mg/L	1	EPA 200.7
Sodium	271	458		mg/L	1	EPA 200.7
<b>Radionuclides</b>						
Gross Alpha (Dissolved)	11.6 ± 4.0	4.1 ± 2.7		pCi/L	2	SM 7110B
Gross Beta (Dissolved)	12.8 ± 6.0	15.1 ± 5.8		pCi/L	3	SM 7110B
Radium 226 (Dissolved)	2.0 ± 0.2	0.6 ± 0.1		pCi/L	0.2	SM 7500 Ra-B
Radium 228 (Dissolved)	ND	ND		pCi/L	1	Ga-Tech
Radium 226 + Radium 228	2.0 ± 1.2	ND		pCi/L	1	Calculation
Radon-222	ND	ND		pCi/L	100	ASTM D5072-09
Thorium 230 (Dissolved)	ND	ND		pCi/L	0.2	ACW10
Thorium 229 Tracer	84	83		%	-1000	ACW10

## Water Sampling Results

Sample ID	RH-SW-RSJ6-001	RH-SW-RSJ8-002	RH-SW-RSJ7-003	Units	Detection Limit	Method
Lab ID	S1505510-001	S1505470-001				
Location	RSJ #6	RSJ #8	RSJ #7			
Type	Water Analysis	Water Analysis	Water Analysis			
Sample Date	5/27/2015	5/27/2015	9/1/2015			
<b>Dissolved Metals</b>						
Dissolved Aluminum	ND	ND		mg/L	0.1	EPA 200.7
Dissolved Antimony	ND	ND		mg/L	0.005	EPA 200.8
Dissolved Arsenic	0.012	ND		mg/L	0.005	EPA 200.8
Dissolved Barium	0.237	0.220		mg/L	0.005	EPA 200.8
Dissolved Beryllium	ND	ND		mg/L	0.003	EPA 200.7
Dissolved Boron	0.8	1.3		mg/L	0.1	EPA 200.7
Dissolved Cadmium	0.00009	0.00014		mg/L	0.00008	EPA 200.8
Dissolved Chromium	ND	ND		mg/L	0.01	EPA 200.7
Dissolved Cobalt	ND	ND		mg/L	0.005	EPA 200.8
Dissolved Copper	ND	ND		mg/L	0.004	EPA 200.8
Dissolved Iron	ND	ND		mg/L	0.05	EPA 200.7
Dissolved Lead	ND	ND		mg/L	0.001	EPA 200.8
Dissolved Manganese	0.02	0.07		mg/L	0.02	EPA 200.7
Dissolved Mercury	ND	ND		mg/L	0.001	EPA 245.1
Dissolved Molybdenum	ND	ND		mg/L	0.005	EPA 200.8
Dissolved Nickel	ND	ND		mg/L	0.01	EPA 200.7
Dissolved Selenium	ND	ND		mg/L	0.001	EPA 200.8
Dissolved Silver	ND	ND		mg/L	0.0008	EPA 200.8
Dissolved Thallium	ND	ND		mg/L	0.0001	EPA 200.8
Dissolved Uranium	0.0046	0.0034		mg/L	0.0003	EPA 200.8
Dissolved Vanadium	ND	ND		mg/L	0.02	EPA 200.8
Dissolved Zinc	0.02	0.10		mg/L	0.01	EPA 200.7
<b>Total Metals</b>						
Total Mercury	ND	ND		mg/L	0.0001	EPA 245.1
Total Selenium	ND	ND		mg/L	0.001	EPA 200.8
Total Uranium	0.0051	0.0047		mg/L	0.0003	EPA 200.8
<b>Pesticides</b>						
delta-BHC	-	ND	-	mg/L	0.00005	SVOC SW-846: 8081
4,4'-DDE	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
4,4'-DDT	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Aldrin	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
alpha-BHC	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Endosulfan I	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
beta-BHC	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
4,4'-DDD	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Chlordane, total	ND	ND	-	mg/L	0.0005	SVOC SW-846: 8081
Toxaphene	ND	ND	-	mg/L	0.001	SVOC SW-846: 8081
Dieldrin	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Endosulfan sulfate	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Endrin	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Endrin aldehyde	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
gamma-BHC	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Heptachlor	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Heptachlor epoxide	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Endosulfan II	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Methoxychlor	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081
Endrin ketone	ND	ND	-	mg/L	0.00005	SVOC SW-846: 8081

## Water Sampling Results

Sample ID	RH-SW-RSJ6-001	RH-SW-RSJ8-002	RH-SW-RSJ7-003	Units	Detection Limit	Method
Lab ID	S1505510-001	S1505470-001				
Location	RSJ #6	RSJ #8	RSJ #7			
Type	Water Analysis	Water Analysis	Water Analysis			
Sample Date	5/27/2015	5/27/2015	9/1/2015			
<b>SVOCs</b>						
1,2,4-Trichlorobenzene	ND	ND	-	mg/L	0.0205	SVOC 625
1,2-Dichlorobenzene	-	ND	-	mg/L	0.0205	SVOC 625
1,2-Diphenylhydrazine	ND	ND	-	mg/L	0.0205	SVOC 625
1,3-Dichlorobenzene	ND	ND	-	mg/L	0.0205	SVOC 625
1,4-Dichlorobenzene	-	ND	-	mg/L	0.0205	SVOC 625
2,4,6-Trichlorophenol	ND	ND	-	mg/L	0.0205	SVOC 625
2,4-Dichlorophenol	ND	ND	-	mg/L	0.0205	SVOC 625
2,4-Dimethylphenol	ND	ND	-	mg/L	0.0615	SVOC 625
2,4-Dinitrophenol	ND	ND	-	mg/L	0.0615	SVOC 625
2,4-Dinitrotoluene	ND	ND	-	mg/L	0.0205	SVOC 625
2,6-Dinitrotoluene	-	ND	-	mg/L	0.0205	SVOC 625
2-Chloronaphthalene	ND	ND	-	mg/L	0.0205	SVOC 625
2-Chlorophenol	ND	ND	-	mg/L	0.0205	SVOC 625
2-Methyl-6, 6-dinitrophenol	ND	-	-	mg/L	0.00400	SVOC 625
2-Nitrophenol	ND	ND	-	mg/L	0.0205	SVOC 625
3,3'-Dichlorobenzidine	ND	ND	-	mg/L	0.0821	SVOC 625
4-Bromophenyl phenyl ether	-	ND	-	mg/L	0.0205	SVOC 625
4-Chlorophenyl phenyl ether	-	ND	-	mg/L	0.0205	SVOC 625
4-Nitrophenol	-	ND	-	mg/L	0.0615	SVOC 625
Acenaphthene	ND	ND	-	mg/L	0.0205	SVOC 625
Acenaphthylene	-	ND	-	mg/L	0.0205	SVOC 625
Anthracene	ND	ND	-	mg/L	0.00513	SVOC 625
Benzidine	ND	ND	-	mg/L	0.0821	SVOC 625
Benz(a)anthracene	ND	ND	-	mg/L	0.00513	SVOC 625
Benzo(a)pyrene	ND	ND	-	mg/L	0.0205	SVOC 625
Benzo(g,h,i)perylene	-	ND	-	mg/L	0.0205	SVOC 625
Benzo(k)fluoranthene	ND	ND	-	mg/L	0.041	SVOC 625
Benzo(b)fluoranthene	ND	ND	-	mg/L	0.041	SVOC 625
Bis(2-chloroethoxy)methane	-	ND	-	mg/L	0.0205	SVOC 625
Bis(2-chloroethyl) ether	ND	3.89	-	mg/L	2.05	SVOC 625
Bis(2-chloroisopropyl) ether	ND	ND	-	mg/L	0.0205	SVOC 625
Bis(2-ethylhexyl) phthalate	ND	ND	-	mg/L	0.0205	SVOC 625
Butyl benzyl phthalate	ND	ND	-	mg/L	0.0205	SVOC 625
Chrysene	ND	ND	-	mg/L	0.0205	SVOC 625
Di-n-butyl phthalate	ND	ND	-	mg/L	0.0205	SVOC 625
Di-n-octyl phthalate	-	ND	-	mg/L	0.0205	SVOC 625
Dibenz(a,h)anthracene	ND	ND	-	mg/L	0.0205	SVOC 625
Diethyl phthalate	ND	ND	-	mg/L	0.0205	SVOC 625
Dimethyl phthalate	ND	ND	-	mg/L	0.0205	SVOC 625
Fluoranthene	ND	ND	-	mg/L	0.0205	SVOC 625
Fluorene	ND	ND	-	mg/L	0.0205	SVOC 625
Hexachlorobenzene	ND	ND	-	mg/L	0.0205	SVOC 625
Hexachlorobutadiene	ND	ND	-	mg/L	0.0205	SVOC 625
Hexachlorocyclopentadiene	ND	ND	-	mg/L	0.0205	SVOC 625
Hexachloroethane	ND	ND	-	mg/L	0.0205	SVOC 625
Indeno(1,2,3-cd)pyrene	ND	ND	-	mg/L	0.0205	SVOC 625
Isophorone	ND	ND	-	mg/L	0.0205	SVOC 625
N-nitrosodipropylamine	ND	ND	-	mg/L	0.0205	SVOC 625
N-Nitrosodimethylamine	ND	ND	-	mg/L	0.0205	SVOC 625
N-Nitrosodiphenylamine	ND	ND	-	mg/L	0.0205	SVOC 625
Naphthalene	-	ND	-	mg/L	0.0205	SVOC 625
Nitrobenzene	ND	ND	-	mg/L	0.0205	SVOC 625
4-Chloro-3-methylphenol	-	ND	-	mg/L	0.0205	SVOC 625
Pentachlorophenol	ND	ND	-	mg/L	0.0615	SVOC 625
Phenanthrene	ND	ND	-	mg/L	0.0205	SVOC 625
Phenol	ND	155	-	mg/L	20.5	SVOC 625
Pyrene	ND	ND	-	mg/L	0.0205	SVOC 625
3,4-Methylphenol	-	ND	-	mg/L	0.0205	SVOC 625
Dibenzofuran	-	ND	-	mg/L	0.0205	SVOC 625

**Appendix C**  
Sediment Sample Results

Sediment Sampling Results

Sample ID	RH-SED-RSJ1-008	RH-SED-RSJ1-009	RH-SED-RSJ2-001	RH-SED-RSJ2-002	RH-SED-RSJ3-004	RH-SED-RSJ3-005	RH-SED-RSJ4-003	RH-SED-RSJ5-006	RH-SED-RSJ5-007	RH-SED-RSJ7-012	RH-SED-RSJ7-013	RH-SED-RSJ9-010	RH-SED-RSJ9-011	Units	Detection Limit	Method
Lab ID	S1505504-001	S1505504-002	S1505348-001	S1505348-002	S1505438-001	S1505438-002	S1505348-003	S1505438-003	S1505438-004			S1505504-003	S1505504-004			
Location	RSJ #1		RSJ #2		RSJ #3		RSJ #4	RSJ #5		RSJ #7		RSJ #9				
Sample Depth (ft)	0.5	1.5	0.5	1.5	0.5	1.5	0.5	0.5	1.5	0.5	1.5	0.5	1.5			
Sample Date	5/27/2015	5/27/2015	5/19/2015	5/19/2015	5/21/2015	5/21/2015	5/19/2015	5/21/2015	5/21/2015	9/1/2015	9/1/2015	5/27/2015	5/27/2015			
<b>General Parameters</b>																
pH	7.3	7.5	7.5	7.6	7.6	7.7	7.6	7.7	7.6			7.9	8.2	s.u.	0.1	USDA 60-21a
% Moisture	14.5	12.5	6.6	7.3	12.6	8.8	5.0	13.3	20.7			16.1	16.7	%	0.1	ASTM D2216
Oil and Grease	ND	ND	ND	ND	ND	ND	ND	ND	ND			<0.119	<0.12	%-dry	0.107	Mod. 9071B
<b>Saturated Paste Anions</b>																
Chloride	6	9	13	10	35	32	62	14	13			3140	6400	ppm	1	EPA 300.0
Flouride	0.9	0.9	0.8	1.0	1.9	1.8	1.1	1.6	1.7			2.4	5.1	ppm	0.1	EPA 300.0
Sulfate as S	78	89	76	87	30	38	42	112	252			5160	12400	ppm	1	EPA 300.0
<b>Texture</b>																
Sand	63.0	73.0	67.0	67.0	43.0	65.0	61.0	43.0	27.0			91.0	91.0	%	0.1	ASTM D422
Silt	17.0	6.0	12.0	13.0	17.0	10.0	17.0	20.0	27.0			3.0	3.0	%	0.1	ASTM D422
Clay	20.0	21.0	21.0	20.0	40.0	25.0	22.0	37.0	46.0			6.0	6.0	%	0.1	ASTM D422
Texture	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Clay	Sandy Clay Loam	Sandy Clay Loam	Clay Loam	Clay			Sand	Sand			ASTM D422
<b>Nitrogen</b>																
TKN	0.13	0.10	0.10	0.09	0.09	0.10	0.11	0.12	0.10			0.07	0.07	%	0.01	ASA9 31-3
<b>Radionuclides</b>																
Gross Alpha	ND	ND	ND	ND	ND	ND	ND	ND	ND			<10	<10	pCi/g	10	SM 7110
Gross Beta	ND	ND	ND	ND	ND	ND	ND	ND	ND			<10	<10	pCi/g	10	SM 7110
Radium - 226	0.4 ± 0.1	0.3 ± 0.1	0.7 ± 0.1	0.7 ± 0.1	0.8 ± 0.1	0.5 ± 0.1	0.5 ± 0.1	0.7 ± 0.1	0.9 ± 0.1			0.4 ± 0.1	0.5 ± 0.1	pCi/g	0.2	E901.1 Mod.
Radium - 228	0.6 ± 0.1	0.7 ± 0.1	0.6 ± 0.1	0.6 ± 0.1	1.0 ± 0.1	0.7 ± 0.1	0.6 ± 0.1	0.8 ± 0.1	1.1 ± 0.1			0.5 ± 0.1	0.5 ± 0.1	pCi/g	0.2	E901.1 Mod.
Thorium - 230	0.4 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.5 ± 0.2	0.7 ± 0.2	0.3 ± 0.1	0.3 ± 0.1	0.5 ± 0.2	0.5 ± 0.2			0.26 ± 0.1	0.3 ± 0.1	pCi/g	0.2	ACW10
Thorium - 229 Tracer	93.0	97.3	89.2	87.4	70.6	87.2	86.3	83.0	79.9			89.4	83.8	%		ACW10
<b>Total Metals</b>																
Aluminum	11000	10800	10900	10600	21100	11900	8850	18800	21500			3460	4160	mg/Kg	0.5	6010C
Antimony	1	2	ND	1	ND	ND	ND	ND	2			<1	<1	mg/Kg	1	6010C
Arsenic	4.6	3.5	4.4	3.9	5.7	3.8	3.7	7.0	3.5			2.3	3.5	mg/Kg	0.5	6010C
Barium	163	175	144	156	287	181	125	304	286			85.6	125	mg/Kg	0.5	6010C
Beryllium	0.7	0.7	0.7	0.7	1.3	0.7	0.5	1.2	1.2			<0.5	<0.5	mg/Kg	0.5	6010C
Boron	16.0	14.1	15.9	14.5	21.9	14.9	11.9	23.1	22.2			14.4	25.4	mg/Kg	4.2	6010C
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND			<0.5	<0.5	mg/Kg	0.5	6010C
Calcium	12800	11400	17100	14700	15100	11900	18300	25500	27600			11100	17300	mg/Kg	5	6010C
Chromium	9.4	8.6	9.2	9.2	17.9	10.1	8.6	16.8	15.1			4.0	6.0	mg/Kg	0.5	6010C
Cobalt	5.8	5.3	5.5	5.2	8.7	5.7	4.6	8.3	7.7			3.1	4.7	mg/Kg	0.5	6010C
Copper	8.9	6.9	8.1	7.5	13.5	6.1	8.1	14.7	11.0			3.2	4.4	mg/Kg	0.5	6010C
Iron	9470	8200	9730	10100	17400	13200	8970	13400	16800			6740	9510	mg/Kg	0.5	6010C
Lead	9.1	8.0	9.6	9.0	16.4	7.3	17.1	19.1	13.5			5.0	6.8	mg/Kg	0.5	6010C
Magnesium	4250	4070	4620	4390	7620	4010	4180	8000	8460			2410	3690	mg/Kg	9	6010C
Manganese	272	281	256	243	441	482	242	377	258			179	273	mg/Kg	0.5	6010C
Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	ND			<0.5	<0.5	mg/Kg	0.5	6010C
Nickel	9.9	9.0	9.5	9.2	16.6	10.6	9.5	15.2	14.8			5.3	7.5	mg/Kg	0.5	6010C
Potassium	3400	3020	3320	2970	5670	2230	2340	4780	4920			870	1090	mg/Kg	2.6	6010C
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND			1	<1	mg/Kg	1	6010C
Silver	ND	ND	0.5	ND	0.8	ND	0.7	1.1	0.8			<0.5	<0.538	mg/Kg	0.5	6010C
Sodium	ND	74	100	82	196	119	135	253	304			1900	3690	mg/Kg	73	6010C
Zinc	35.4	30.4	37.6	34.5	53.1	25.9	36.3	72.0	47.2			18.8	26.3	mg/Kg	1.3	6010C

Sediment Sampling Results

Sample ID	RH-SED-RSJ1-008	RH-SED-RSJ1-009	RH-SED-RSJ2-001	RH-SED-RSJ2-002	RH-SED-RSJ3-004	RH-SED-RSJ3-005	RH-SED-RSJ4-003	RH-SED-RSJ5-006	RH-SED-RSJ5-007	RH-SED-RSJ7-012	RH-SED-RSJ7-013	RH-SED-RSJ9-010	RH-SED-RSJ9-011	Units	Detection Limit	Method
Lab ID	S1505504-001	S1505504-002	S1505348-001	S1505348-002	S1505438-001	S1505438-002	S1505348-003	S1505438-003	S1505438-004			S1505504-003	S1505504-004			
Location	RSJ #1		RSJ #2		RSJ #3		RSJ #4	RSJ #5		RSJ #7		RSJ #9				
Sample Depth (ft)	0.5	1.5	0.5	1.5	0.5	1.5	0.5	0.5	1.5	0.5	1.5	0.5	1.5			
Sample Date	5/27/2015	5/27/2015	5/19/2015	5/19/2015	5/21/2015	5/21/2015	5/19/2015	5/21/2015	5/21/2015	9/1/2015	9/1/2015	5/27/2015	5/27/2015			
<b>Mercury</b>																
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND			<0.2	<0.2	mg/Kg	0.2	7471B
<b>Total Metals</b>																
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND			<0.5	<0.5	mg/Kg	0.5	EPA 200.8
Uranium	0.8	3.5	1.1	1.5	1.1	0.8	0.8	0.9	1.2			2.0	0.9	mg/Kg	0.5	EPA 200.8
Vanadium	14.5	13.3	14.4	13.7	22.9	17.2	16.0	20.5	20.3			10.4	12.9	mg/Kg	0.8	EPA 200.8
<b>Dioxin</b>																
2,3,7,8-Tetrachlorodibenzofuran	ND	ND	-	-	-	-	-	-	-	-	-	-	-	ng/Kg		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	32.4	17.1	-	-	-	-	-	-	-	-	-	-	-	ng/Kg	0.945	
<b>Pesticides</b>																
delta-BHC	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
4,4'-DDE	0.0261	0.00566	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
4,4'-DDT	0.00239	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Aldrin	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
alpha-BHC	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Endosulfan I	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
beta-BHC	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
4,4'-DDD	0.00182	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Chlordane, total	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.0169	EPA 8081 B
Toxaphene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.0339	EPA 8081 B
Dieldrin	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Endosulfan sulfate	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Endrin	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Endrin aldehyde	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
gamma-BHC	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Heptachlor	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Heptachlor epoxide	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Endosulfan II	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Methoxychlor	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
Endrin ketone	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.00169	EPA 8081 B
<b>SVOCs</b>																
1,2,4-Trichlorobenzene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
1,2-Dichlorobenzene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
1,2-Diphenylhydrazine	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
1,3-Dichlorobenzene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
1,4-Dichlorobenzene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2,4,6-Trichlorophenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2,4-Dichlorophenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2,4-Dimethylphenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2,4-Dinitrophenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2,4-Dinitrotoluene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2,6-Dinitrotoluene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2-Chloronaphthalene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2-Chlorophenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
2-Nitrophenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
3,3'-Dichlorobenzidine	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
4,6-Dinitro-2-methylphenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
4-Bromophenyl phenyl ether	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
4-Chlorophenyl phenyl ether	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
4-Nitrophenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C

Sediment Sampling Results

Sample ID	RH-SED-RSJ1-008	RH-SED-RSJ1-009	RH-SED-RSJ2-001	RH-SED-RSJ2-002	RH-SED-RSJ3-004	RH-SED-RSJ3-005	RH-SED-RSJ4-003	RH-SED-RSJ5-006	RH-SED-RSJ5-007	RH-SED-RSJ7-012	RH-SED-RSJ7-013	RH-SED-RSJ9-010	RH-SED-RSJ9-011	Units	Detection Limit	Method
Lab ID	S1505504-001	S1505504-002	S1505348-001	S1505348-002	S1505438-001	S1505438-002	S1505348-003	S1505438-003	S1505438-004			S1505504-003	S1505504-004			
Location	RSJ #1		RSJ #2		RSJ #3		RSJ #4	RSJ #5		RSJ #7		RSJ #9				
Sample Depth (ft)	0.5	1.5	0.5	1.5	0.5	1.5	0.5	0.5	1.5	0.5	1.5	0.5	1.5			
Sample Date	5/27/2015	5/27/2015	5/19/2015	5/19/2015	5/21/2015	5/21/2015	5/19/2015	5/21/2015	5/21/2015	9/1/2015	9/1/2015	5/27/2015	5/27/2015			
<b>SVOCs - Continued</b>																
Acenaphthene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Acenaphthylene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Anthracene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Benzidine	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Benz(a)anthracene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Benzo(a)pyrene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Benzo(g,h,i)perylene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Benzo(k)fluoranthene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Benzo(b)fluoranthene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Bis(2-chloroethoxy)methane	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Bis(2-chloroethyl) ether	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Bis(2-chloroisopropyl) ether	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Bis(2-ethylhexyl) phthalate	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Butyl benzyl phthalate	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Chrysene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Di-n-butyl phthalate	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Di-n-octyl phthalate	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Dibenz(a,h)anthracene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Diethyl phthalate	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Dimethyl phthalate	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Fluoranthene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Fluorene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Hexachlorobenzene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Hexachlorobutadiene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Hexachlorocyclopentadiene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Hexachloroethane	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Indeno(1,2,3-cd)pyrene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Isophorone	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
N-nitrosodipropylamine	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
N-Nitrosodimethylamine	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
N-Nitrosodiphenylamine	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Naphthalene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Nitrobenzene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
4-Chloro-3-methylphenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Pentachlorophenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Phenanthrene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Phenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Pyrene	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
3,4-Methylphenol	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C
Dibenzofuran	ND	ND	-	-	-	-	-	-	-	-	-	-	-	mg/Kg	0.200	EPA 8270 C

**Appendix D**  
SPLP Extraction Sample Results



SPLP Results

Sample ID	RH-SED-RSJ1-008	RH-SED-RSJ1-009	RH-SED-RSJ2-001	RH-SED-RSJ2-002	RH-SED-RSJ3-004	RH-SED-RSJ3-005	RH-SED-RSJ4-003	RH-SED-RSJ5-006	RH-SED-RSJ5-007	RH-SED-RSJ7-012	RH-SED-RSJ7-013	RH-SED-RSJ9-010	RH-SED-RSJ9-011	Units	Detection Limit	Method
Lab ID	S1506539-001	S1506539-002	S1506279-001	S1506279-002	S1506382-001	S1506382-002	S1506279-003	S1506382-003	S1506382-004			S1506539-003	S1506539-004			
Location	RSJ #1		RSJ #2		RSJ #3		RSJ #4	RSJ #5		RSJ #7		RSJ #9				
Sample Depth (ft)	0.5	1.5	0.5	1.5	0.5	1.5	0.5	0.5	1.5	0.5	1.5	0.5	1.5			
<b>General Parameters</b>																
pH	8.4	8.3	8.3	8.5	8.4	8.5	8.2	8.3	8.4			7.6	8.1	s.u.	0.1	SM 4500 H B
Electrical Conductivity	98	93	92	83	86	67	82	102	122			702	994	µmhos/cm	5	SM 2510B
Total Dissolved Solids (180)	470	690	690	680	920	310	820	650	350			460	640	mg/L	10	SM 2540
Total Suspended Solids	16	ND	22	56	10	ND	286	8	6			6	58	mg/L	5	SM 2540
Nitrite Nitrogen (as N)	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.1	EPA 353.2
Nitrate Nitrogen (as N)	0.9	0.8	0.4	0.2	ND	ND	ND	ND	ND			ND	ND	mg/L	0.1	EPA 353.2
Hardness (Ca/Mg As CaCO3)	69	51	70	66	67	21	49	65	43			186	167	mg/L	1	SM 2340B
Total Nitrogen	3	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	1	Calculation
Total Kjeldahl Nitrogen (TKN)	2	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	1	EPA 351.2
Color	62	110	12	20	115	75	18	83	61			48	49	C.U.	1	SM 2120B
Total Cyanide	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.005	EPA 335.4
Oil & Grease N-Hexane Extractable	ND	5.00	ND	ND	17.4	25.0	ND	3.33	3.59			ND	7.92	mg/L	3.11	EPA 1664A
Total Recoverable Phenolics	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.05	EPA 420.4
Total Carbon	15	15	18	13	5	3	13	8	10			5	6	mg/L	1	SM 5310B
Total Organic Carbon	3	3	2	3	2	2	2	5	2			2	2	mg/L	1	SM 5310B
<b>Data Quality</b>																
Total Dissolved Solids (Calc)	90	80	100	70	100	60	60	100	90			410	560	mg/L	10	SM 1030E
<b>Anions/Cations</b>																
Total Alkalinity (as CaCO3)	88	68	82	71	97	55	53	95	70			14	21	mg/L	5	SM 2320B
Bicarbonate as HCO3	102	83	98	83	117	63	64	115	83			17	26	mg/L	5	SM 2320B
Carbonate as CO3	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	5	SM 2320B
Hydroxide as OH	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	5	SM 2320B
Chloride	ND	ND	2	ND	ND	ND	1	ND	ND			51	96	mg/L	1	EPA 300.0
Fluoride	0.3	0.2	0.2	0.3	0.4	0.3	0.2	0.8	1.0			0.2	0.3	mg/L	0.1	SM 4500FC
Nitrate-Nitrite Nitrogen (as N)	0.9	0.8	0.4	0.2	ND	ND	ND	ND	ND			ND	ND	mg/L	0.1	EPA 353.2
Sulfate	3	3	2	2	2	2	2	6	14			224	279	mg/L	1	EPA 300.0
Calcium	9	18	11	17	17	6	20	10	11			54	31	mg/L	1	EPA 200.7
Magnesium	11	1	10	6	6	1	ND	10	4			13	22	mg/L	1	EPA 200.7
Potassium	3	9	17	3	2	5	2	2	2			3	4	mg/L	1	EPA 200.7
Sodium	7	6	2	2	15	13	2	15	17			61	120	mg/L	1	EPA 200.7
Ammonia Nitrogen (As N)	0.3	0.2	0.4	0.2	0.1	ND	0.2	0.1	0.1			0.1	ND	mg/L	0.1	EPA 350.1
Phosphorus (Orthophosphate as P)	0.1	0.1	0.2	0.2	0.2	0.1	0.2	ND	ND			ND	ND	mg/L	0.1	EPA 300.0
<b>Radionuclides</b>																
Gross Alpha (Dissolved)	2.8 ± 1.2	4.3 ± 1.3	2.7 ± 0.8	3.9 ± 0.9	4.0 ± 1.6	2.9 ± 1.3	3.3 ± 0.9	ND	ND			2.3 ± 1.3	ND	pCi/L	2	SM 7110B
Gross Beta (Dissolved)	4.0 ± 2.5	6.1 ± 2.5	12.6 ± 1.6	8.7 ± 1.6	10.3 ± 3.0	7.6 ± 2.8	9.3 ± 1.7	ND	3.5 ± 2.3			ND	ND	pCi/L	3	SM 7110B
Radium 226 (Dissolved)	0.4 ± 0.2	0.4 ± 0.2	0.5 ± 0.2	0.4 ± 0.1	0.4 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.3 ± 0.1	0.3 ± 0.1			ND	0.6 ± 0.2	pCi/L	0.2	SM 7500 Ra-B
Radium 228 (Dissolved)	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	1.5 ± 1.2	pCi/L	1	Ga-Tech
Radium 226 + Radium 228	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	2.1 ± 1.4	pCi/L	1	Calculation
Radon-222	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	pCi/L	100	ASTM D5072-09
Thorium 230 (Dissolved)	0.2 ± 0.2	0.4 ± 0.3	0.8 ± 0.6	0.3 ± 0.2	0.3 ± 0.2	0.2 ± 0.2	0.3 ± 0.2	ND	ND			ND	ND	pCi/L	0.2	ACW10
Thorium 229 Tracer	89	90	96	85	71	67	77	92	82			89	83	%	-1000	ACW10

SPLP Results

Sample ID	RH-SED-RSJ1-008	RH-SED-RSJ1-009	RH-SED-RSJ2-001	RH-SED-RSJ2-002	RH-SED-RSJ3-004	RH-SED-RSJ3-005	RH-SED-RSJ4-003	RH-SED-RSJ5-006	RH-SED-RSJ5-007	RH-SED-RSJ7-012	RH-SED-RSJ7-013	RH-SED-RSJ9-010	RH-SED-RSJ9-011	Units	Detection Limit	Method
Lab ID	S1506539-001	S1506539-002	S1506279-001	S1506279-002	S1506382-001	S1506382-002	S1506279-003	S1506382-003	S1506382-004			S1506539-003	S1506539-004			
Location	RSJ #1		RSJ #2		RSJ #3		RSJ #4	RSJ #5		RSJ #7		RSJ #9				
Sample Depth (ft)	0.5	1.5	0.5	1.5	0.5	1.5	0.5	0.5	1.5	0.5	1.5	0.5	1.5			
<b>Dissolved Metals</b>																
Dissolved Aluminum	1.4	1.5	1.5	ND	2.4	ND	ND	ND	ND			ND	ND	mg/L	0.1	EPA 200.7
Dissolved Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.005	EPA 200.8
Dissolved Arsenic	ND	ND	0.005	ND	0.008	ND	0.007	0.006	ND			ND	ND	mg/L	0.005	EPA 200.8
Dissolved Barium	0.035	0.034	0.048	0.033	0.045	0.019	0.022	0.041	0.062			0.039	0.042	mg/L	0.005	EPA 200.8
Dissolved Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.003	EPA 200.7
Dissolved Boron	0.1	ND	ND	ND	0.1	ND	ND	0.1	0.1			0.5	0.6	mg/L	0.1	EPA 200.7
Dissolved Cadmium	ND	0.00016	0.00028	0.00030	ND	ND	0.00028	ND	ND			ND	ND	mg/L	0.00008	EPA 200.8
Dissolved Chromium	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.01	EPA 200.7
Dissolved Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.005	EPA 200.8
Dissolved Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.004	EPA 200.8
Dissolved Iron	0.67	0.69	0.7	ND	1.23	ND	ND	ND	ND			ND	ND	mg/L	0.05	EPA 200.7
Dissolved Lead	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.001	EPA 200.8
Dissolved Manganese	ND	ND	ND	ND	0.20	ND	ND	ND	ND			ND	ND	mg/L	0.02	EPA 200.7
Dissolved Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.001	EPA 245.1
Dissolved Molybdenum	ND	ND	ND	ND	ND	0.007	ND	ND	ND			ND	ND	mg/L	0.005	EPA 200.8
Dissolved Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.01	EPA 200.7
Dissolved Selenium	ND	ND	0.001	0.001	0.001	ND	ND	0.002	0.002			ND	ND	mg/L	0.001	EPA 200.8
Dissolved Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.0008	EPA 200.8
Dissolved Thallium	ND	ND	ND	0.0001	ND	0.0001	ND	ND	ND			ND	ND	mg/L	0.0001	EPA 200.8
Dissolved Uranium	ND	ND	0.0010	0.0018	0.0009	ND	ND	ND	0.0005			ND	ND	mg/L	0.0003	EPA 200.8
Dissolved Vanadium	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.02	EPA 200.8
Dissolved Zinc	0.02	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.01	EPA 200.7
<b>Total Metals</b>																
Total Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	mg/L	0.0001	EPA 245.1
Total Selenium	ND	0.001	0.002	0.001	0.002	ND	0.001	0.002	0.002			0.001	ND	mg/L	0.001	EPA 200.8
Total Uranium	0.0027	0.0028	0.0039	0.0090	0.0060	0.0043	0.0045	0.0030	0.0058			ND	0.0005	mg/L	0.0003	EPA 200.8